FORENSIC ACCOUNTING CURRICULA AND PEDAGOGIES IN AUSTRALIAN UNIVERSITIES: ANALYSIS OF ACADEMIC AND PRACTITIONER PERSPECTIVES

A Thesis Submitted By

Hashem A. Alshurafat

For the Award of

Doctor of Philosophy

2019

Dedication

This work is dedicated to my father and mother, who have been the greatest teachers in my life and are always in my heart. This work is also dedicated to my sisters and my brothers for their continuous moral support and encouragement during my study. Without that, the completion of this thesis would have probably taken much longer.

Abstract

The proliferation of fraud activities and the need for skilled accountants to be proficient in identifying and analysing fraudulent transactions highlights the need for forensic accounting education. Increasing numbers of accounting employers are seeking graduates equipped with investigative, adversarial, and technological skills. Recently, there has been a significant rise in the prevalence of forensic accounting education, and a major paradigm shift among colleges and universities has occurred. However, some universities have opted to delay introducing such programs. The lack of consistency in forensic accounting curricula and pedagogy is a significant obstacle to a cohesive framework for forensic accounting education. Individual curriculum and pedagogical approaches appear to be motivated by a variety of different philosophical orientations. Therefore, this research explores the factors that influence the transformation of forensic accounting knowledge into curricula, and identifies the various pedagogical approaches, which have been perceived as signature pedagogies to forensic accounting.

This thesis provides an overview of the current state of forensic accounting education in Australian universities. Three separate papers are presented and each paper investigates a different aspect of forensic accounting education. The thesis document follows the format of thesis by publication[1]. The three linked and interconnected papers reflect interpretive findings from evidence obtained regarding forensic accounting education within Australian universities. An extensive literature review and the use of several theoretical lenses led to the development of three research questions. The development of the first research phase and the findings revealed from the first research phase led to the development of the second research phase. Through this process, the following research questions are addressed:

1. What are the forensic accounting core curricula components and knowledge? And, what is the nature of the integrated interdisciplinary knowledge that is included in forensic accounting curricula components? (first paper, chapter 3 of the thesis)

2. What factors influence the development of forensic accounting curricula? (second paper, chapter 4 of the thesis)

[1] The format for the thesis will follow the formatting provided under section 3.6 (Format of a Thesis by Publication) of the *USQ Higher Degree by Research Thesis Presentation Schedule*. Papers will be published, accepted, submitted or prepared for publication during the study period. (http://policy.usq.edu.au/documents/151774PL).

3. What are the features and the signature of forensic accounting pedagogies? (third paper, chapter 5 of the thesis)

The first paper captures the structure of forensic accounting curricula within educational programs offered by Australian universities. Using qualitative thematic analysis, a website analysis of the 40 Australian universities is undertaken and provides an understanding of the core and interdisciplinary topics of forensic accounting curricula. The findings suggest a lack of emphasis on law knowledge, business valuation, and IT forensic integration. Courses emphasise fraud as the core content knowledge while criminology and ethics are considered to be interdisciplinary components. The findings also reveal variations in curricula design and content knowledge. These findings suggest an epistemological uncertainty within forensic accounting education. The paper provides directions for educators to assist in developing forensic accounting programs. This paper also sets the stage for an empirical journey regarding further studies in this field, in the face of the continued demand for, and the growing importance of, forensic accounting education.

The second paper addresses a theoretical question within a specific context; what factors influence the development of forensic accounting curricula? Based on Bernstein's (1996, 1999 and 2000) theoretical lens of the pedagogic device and knowledge structure, the research question is explored using a qualitative case study to collect the perspectives of practitioners and academics. This evidence is supported with data collected from Australian university websites. The findings indicate that there are different factors that influence the formation process of forensic accounting curricula. Further, the horizontal structure of forensic accounting is seen as highly segmented, and this is reflected in curricula that lack coherence and cohesion. This suggests that the forensic accounting curricula in Australian universities encompass a variety of teleological, epistemological, and ontological positions. As a result, it is identified that there was inconsistency around the nature and purpose of forensic accounting topics within courses and programs of study. Further inconsistency results from the bureaucratic system within which universities operate. These inconsistencies resulted in academics teaching and writing forensic accounting courses primarily based on their own epistemological roots and knowledge base or reflecting their particular university philosophy.

The third paper presents evidence from two qualitative research sources to explore the educational pedagogies for teaching forensic accounting. Principally, this research analyses the current forensic accounting curricula, handbooks, and syllabi used by Australian universities

to explore the pedagogical methods that have been used to teach forensic accounting. This is supplemented by interviews which investigate the perspectives of forensic accounting practitioners and academics in regards to the types of forensic accounting pedagogies that facilitate the acquisition of the requisite competencies. The theoretical framework used in this paper includes experiential learning theory and signature pedagogies theory.

A qualitative approach to the case study yields insights into the usefulness of various teaching methods in forensic accounting. The findings show that some standalone courses and programs of forensic accounting were conducted using traditional learning mechanisms which aimed to give students the opportunity to gain a theoretical understanding. Other courses utilised experiential learning forms, including report writing or case studies. In terms of pedagogies within forensic accounting education, the research revealed elements and features that embody signature pedagogies of forensic accounting. The results from this research advocate for the use of an experiential approach as a philosophy and signature for forensic accounting educational pedagogies. It is proposed that forensic accounting educators aspire to engage students by the use of experiential learning methods as this approach simulates real forensic accounting work in its technical, theoretical and ethical dimensions.

The study provides constructive suggestions and guidance for educators, educational policymakers, and university bodies related to the factors and requirements that they should be aware of when considering the development of forensic accounting curricula and pedagogies. The results also provide incentives to consider how to address the existing impediments which have been identified by academics and practitioners. In respect to the theoretical contribution, one valid way of providing a theoretical contribution to a specific social science arena is to import a theory which has yet to be applied to the phenomenon under research. In this research, theoretical lenses from the field of education were borrowed to understand an educational inquiry within the field of forensic accounting education. The theoretical framework includes the use of pedagogic device and knowledge structure theory (Bernstein 1999, 2000), experiential learning theory (Kolb 1984) and signature pedagogy (Shulman 2005b).

This research project contributes to the literature in three ways. First, this research explores the current directions that Australian universities have taken in teaching forensic accounting to higher education students. This research shows the fraud concentration in the forensic accounting programs and emphases on the need to integrate more law, business valuation and IT knowledge in forensic accounting programs. Second, this research solicits practitioners' and

educators' perceptions about current forensic accounting curricula and pedagogies. This research shows how forensic accounting educators' beliefs might be an obstacle to capture the wide range of forensic accounting subtopics. In addition, this reach report on the main factors that shapes forensic accounting curricula. Third, this research suggests changes that may lead to improvements in forensic accounting education, particularly; the fifth chapter provide suggestions in how to use experiential learning approach to equip students with knowledge of real forensic accounting work. This exploratory research is important for four reasons. First, accounting bodies worldwide have advocated incorporating forensic accounting education into accounting degrees. Second, researchers have noted that while there is increasing demand for forensic accounting skills within the job market, there is a lack of adequate forensic accounting education that reconciles graduates' competencies with the expectations of employers. Third, the research addresses a gap in the accounting education literature as little extant research has focused on forensic accounting curricula and pedagogical approaches. Finally, this research borrows theories from the education field to understand curricular and pedagogical inquiry in forensic accounting discipline.

Certification of Thesis

This Thesis is the work of Hashem Al-shurafat except where otherwise acknowledged, with the majority of the authorship of the papers presented as a Thesis by Publication undertaken by the Student. The work is original and has not previously been submitted for any other award, except where acknowledged.

Principal Supervisor: Professor John Sands

Associate Supervisor: Dr. Claire Beattie

Associate Supervisor: Dr. Gregory Jones

Student and supervisors signatures of endorsement are held at the University.

Statement of Contribution

This thesis consists of three papers based on empirical findings. I, Hashem Al-shurafat, declare that my overall contribution was 70% to the concept development, analysis, drafting and revising the final submission. Professor John Sands, Dr Gregory Jones, and Dr Claire Beattie also contributed to the concept development, analysis, editing and providing important technical inputs by 10% each. I have indicated the areas of the contribution in the following table. These contributions relate to all three papers.

Papers based on the thesis	Contributors and areas of contribution
1. Chapter three: Forensic Accounting Core and Interdisciplinary Curricula Components in Australian Universities: Analysis of Websites (Accepted) 2. Chapter four: curriculum formation: a case study from forensic accounting (Submitted) 3. Chapter five: Perceptions of the Usefulness of Various Teaching Methods in Forensic Accounting Education (Submitted)	Hashem Al-shurafat (Candidate and Principal investigator of the three papers. Contribution 70%.)
	Professor John Sands (Principal Supervisor and Co-author of the three papers. Contribution 10%.)
	Dr. Claire Beattie (Associate Supervisor and Co-author of the three papers. Contribution 10%.)
	Dr. Gregory Jones (Associate Supervisor and Co-author of the three papers. Contribution 10%.)

Acknowledgements

I would like to thank the Almighty God, the most Beneficent and the most Merciful, who has empowered and enabled me to complete this thesis successfully.

I wish to give special thanks and to express on my sincerest gratitude to my supervisors, Professor John Sands, Dr. Claire Beattie and Dr. Gregory Jones, for their guidance, patience, time and enthusiasm throughout the stages of my PhD. Without their continuous assistance and encouragement this thesis could not have been completed.

I am delighted to give my special appreciation to all administrative and academic staff in University of Southern Queensland for their support. I take this opportunity to present a special appreciation to Dr Afzalur Rashid for facilitating my enrolment in my PhD, and I would like to acknowledge Professor Roger Lawrey and Professor Marie Kavanagh.

I also would like to thank Ms Amy Jones and Ms Julie Martyn for the trustworthy transcription and proofreading service.

My colleagues and friends were responsible for creating a pleasant working environment during the years I was allowed to spend with them. I would like to express my special thanks to Dr. Syed Faheem Hasan Bukhari, Bashar Aldajaa, Salem Alenzi, Jeberel Almassadein, Dr. Moh Mohsin, Alaa Alsherbenie, Ayman Alkhatatbah, Dr. Awedat Musbah, Dr. Tareq Alhatamani, Dr. Rajab Abu Snaina, Abdulrahman Algathafi, Amer Oun Alsartaoe, Mohamad Almarafi, Khaled Awwad, Omar Ajarmah, Altayib Alfakier, Mohamad Almarafi, Ahmad Anvy, Dragham Al-otom, Yousef Alturk, Tareq Alhidmi, Raed Rbehat, Avijiat and Mudahmita. They played a major role in my development during these years, both on a scientific and a personal level.

I was blessed to have been able to attend the AFAANZ doctoral symposium and the annual meeting of accounting education special interest group. I would like to thank both academic staff and doctoral students, who were very generous in providing me with their constructive comments. I would like to express my special thanks to Professor Jacqueline Birt from The University of Western Australia, Dr. Sumit Lodhia from University of South Australia, Dr. Mary Low from University of Waikato / New Zealand, and Dr. Meredith Tharapos from RMIT University.

My appreciation also goes to the participants of the interviews for their important contribution to the output of my field research.

I would like to thank the editor of Journal of Forensic and Investigative Accounting (Professor Larry Crumbley) and the two anonymous reviewers for their helpful comments on my paper.

Special thanks go to my uncle Dr. Ali Alshurafat for his kindness and support in overcoming my challenges.

I take this opportunity to present a special thanks to Dr. Abdullah Alzubi, Ibrahim Alkhatatbah, Huthifa Alhazaima, Inmar Alsabaana and Saleh Omar.

Last, but by no means least, I gratefully acknowledge the financial support given to me from the Hashemite University. Special thanks also should go to all administrative and academic staff in Business and Administrative Collage, Hashemite University.

List of Publications

- Journal articles

Alshurafat, H. Beattie, C. Jones, G. & Sands, J. (2019). Forensic Accounting Core and Multidisciplinary Curricula Components of Australian Universities: A Websites Analysis. Journal of forensic and investigative accounting. (In Press: Volume 11: Issue 2, Special Edition).

- Unpublished Papers: Submitted

Alshurafat, H. Beattie, C. Jones, G. & Sands, J. (2019). Curriculum formation: a case study from forensic accounting. (Paper submitted to an academic journal's double blind peer review process).

Alshurafat, H. Beattie, C. Jones, G. & Sands, J. (2019). Perceptions of the Usefulness of Various Teaching Methods in Forensic Accounting Education. (Paper submitted to an academic journal's double blind peer review process).

- Conference Presentations

Alshurafat, H. Beattie, C. Jones, G. & Sands, J. (2018). Factors Influencing the Transformation of Forensic Accounting Knowledge into Curricula. Proceedings of the RMIT Accounting Educators' Conference. 19th of November. Melbourne, Australia.

Alshurafat, H. Beattie, C. Jones, G. & Sands, J. (2018). Exploring Australian Universities' Forensic Accounting Core Curricula. Proceedings of the Accounting and Finance Association of Australia and New Zealand (AFAANZ) education special interest group 5. Auckland–New Zealand.

- Symposium Presentations

Alshurafat, H. (2018) Development of Forensic Accounting Education within the Australian Universities Accounting and Finance Association of Australia and New Zealand (AFAANZ) Doctoral Symposium Auckland–New Zealand.

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List of Abbreviations

FA	Forensic Accounting
APESB	Accounting Professional and Ethical Standards Board
FAIDG	Forensic Accounting and Investigation Discussion Group
CA ANZ	Chartered Accountants Australia and New Zealand
BVSIG	Business Valuation Special Interest Group
FASIG	Forensic Accounting Special Interest Group
AICPA	Association of International Certified Professional Accountants
ACFE	Association of Certified Fraud Examiners
AACSB	Association to Advance Collegiate Schools of Business
IPA	Institute of Public Accountants
NIJ	National Institute of Justice
Cr.FA	Certified Forensic Accountant
CIRA	Certified Insolvency and Reorganization Accountant
CFF	Certified Fraud Specialist
CFCI	Certified Financial Crimes Investigator
CFCS	Certified Financial Crime Specialist
CAMS	Certified Anti-Money Laundering Specialist
ORF	Official Recontextualising Field
PRF	Pedagogic Recontextualising Field
FAFI	Forensic Accounting and Fraud Investigation

Chapter One: Introduction

1.1. Overview

This chapter introduces the thesis by providing an overview of the research background organised into the following subsections. The next subsection provides background on forensic accounting practice and education, as well as a focus on the Australian context and highlights the motivations for this research. The third section crystallises the research problem along with identifying the knowledge gap, research aim and objectives and research questions. Section 4 illustrates the theories that have been adopted in this thesis to help interpret the findings accurately. Section 5 presents a justification for the methodology used, by critiquing the prior research approaches and identifying the approach taken in this research. In addition, an overview of the research phases, the selected sample technique and ethical consideration are provided. Section 6 highlights the value of this research by presenting the significance and importance of the research. Section 7 contains an outline of the six chapters of the thesis.

1.2. Research background

Forensic accounting is a contemporary subfield of the accounting profession that deals with a range of financial matters including acting as an expert witness in court proceedings, fraud and financial crimes, cybercrimes and business valuation issues. Each category of forensic accounting services includes a number of sub-services (Davis et al. 2010; Huber & DiGabriele 2015b; Hegazy et al. 2017; Tiwari & Debnath 2017). Forensic accounting services as defined by the Accounting Professional and Ethical Standards Board (APESB)[1] in the APES 215 Standard[2] "*means expert witness services, lay witness services, consulting expert services and investigation services"* (page 2). In the last two decades, there has been an increasing amount of attention given to forensic accounting applications, education and research (Fleming et al. 2008; Heitger & Heitger 2008; Kranacher et al. 2008; Huber & DiGabriele 2015a, 2015b; Tiwari & Debnath 2017; Howieson 2018). Increased attention to forensic accounting has stemmed from the increased number of fraud incidents and financial crimes. Another reason is the increasing need for specialist forensic accountants who are able to provide expert witness services within the courts in terms of financial litigation matters. Moreover, the broad set of services that forensic accountants provide foster the demand on forensic accounting skills and knowledge (Botes & Saadeh 2018; Howieson 2018; Jones & Dosanjh-Zucker 2018).

Forensic accounting has been depicted as a multidisciplinary field, where practitioners are providing a range of services (Van Akkeren et al. 2013; Tarr et al. 2016; Hegazy et al. 2017; Tiwari & Debnath 2017; Botes & Saadeh 2018). These services include fraud investigation, litigation services, business valuation and IT forensics. In term of fraud investigations, forensic accountants play a significant role in detecting and preventing fraud from occurring (Van Akkeren & Buckby 2015; Mehta & Bhavani 2017). Within the broad range of services offered by forensic accounting firms, approximately one-third of these services focus on fraud (Van Akkeren et al. 2013). Fraud is also the dominant topic featured by the majority of papers published in forensic accounting journals (Huber & DiGabriele 2015b). Furthermore, forensic accountants are expected to deal with a computerised environment and engage with work such

[1] The Accounting Professional & Ethical Standards Board is an independent, national body that sets out the code of ethics and professional standards with which accounting professionals who are members of CPA Australia, Chartered Accountants Australia and New Zealand (CAANZ) or Institute of Public Accountants must comply.
[2] https://www.apesb.org.au/uploads/standards/superseded_pronouncements/07042015033731_APES_215_Standard.pdf

as information technology, data mining, and computer forensics (Pearson & Singleton 2008; Suh & Headrick 2010; Marshall & Cali 2015).

Researchers often relate the importance of forensic accounting to the adversarial role that forensic accountants play in the litigation process (Durney & Fitzpatrick 2016), which include functions such as trier of fact, court-appointed expert, arbitrator, referee or mediator (Brennan 2005; DiGabriele 2008b, 2011). Analysing complex financial transactions and presenting evidence to the court for financial dispute matters put the forensic specialists in the forefront of the financial litigation and business dispute resolving process (Renzhou 2011; Blalock 2012; Warshavsky 2013; Craig et al. 2014; HuberDomino, et al. 2015). Furthermore, the business valuation process remains a substantial category of forensic accounting services (DiGabriele, 2008b; Smith, 2012). Business valuation is the process of assessing the estimated value of a business entity (DiGabriele 2009a). It involves a detailed understanding and analysis of the firm under the process of valuation, including the business environment in which it operates, and the local and national economic climates (DiGabriele 2008b; Smith 2012).

Forensic accounting literature has been increased recently (Huber & DiGabriele 2015b; Tarr et al. 2016; Tiwari & Debnath 2017). Many researchers have contributed findings of different topics related to forensic accounting including profession regulation and accreditation (Huber 2011b, 2012, 2013a; Brennan 2014; Gosselin 2014; Huber 2014b, 2014a; McIntyre et al. 2014; Van Akkeren & Tarr 2014; Domino et al. 2017). Some researchers have focused on forensic accounting skills (Carnes & Gierlasinski 2001; DiGabriele 2007, 2008a; Davis et al. 2010; McMullen & Sanchez 2010; Salleh & Abaziz 2014; Tiwari & Debnath 2017). Other researchers have studied aspects of forensic accounting education (Rezaee & Burton 1997; Peterson 2003; Heitger & Heitger 2008; Kranacher et al. 2008; Ramamoorti 2008; Seda & Kramer 2009; Smith & Crumbley 2009; DiGabriele 2010; Kleinman & Anandarajan 2011; Daniels et al. 2013; Sofianti et al. 2014; Lee et al. 2015; Seda & Kramer 2015; Kern & Weber 2016; Rezaee et al. 2016; Wang et al. 2016). This research focuses on forensic accounting education issues including the curricula and pedagogies within the Australian context. The rationale behind choosing the Australian context is presented in the next subsection.

1.2.1. *The context of the research*

The majority of contemporary forensic accounting research is centred within the USA forensic accounting context (Rezaee & Burton 1997; Buckoff & Schrader 2000; Curtis 2008a; Fleming et al. 2008; Kresse 2008; Huber 2012, 2014b; Seda & Kramer 2014; Jenkins et al. 2017). However, a few articles have expanded their focus to cover contexts in other countries, such as, the UK (Hegazy et al. 2017), Ireland (Brennan 2005, 2014), Canada (Brooks & Labelle 2006b; Rosen 2006; Gosselin 2014), China (Rezaee et al. 2014; Rezaee et al. 2016; Wang et al. 2016) and Australia (Chen & Van Akkeren 2012; Van Akkeren et al. 2013; Van Akkeren & Tarr 2014). This research aims to contribute to the body of literature on forensic accounting education in Australia by exploring the current forensic accounting educational practice within Australian universities. This study will analyse the curricula, handbooks and syllabi of forensic accounting stand-alone courses and programs of study.

In Australia, the demand for forensic accounting professionals is increasing, and receiving renewed recognition from the accounting bodies (Chen & Van Akkeren 2012; Van Akkeren & Tarr 2014; Van Akkeren & Buckby 2015; Tarr et al. 2016). CPA Australia has established the Forensic Accounting and Investigation Discussion Group (FAIDG). In addition, the Chartered Accountants Australia and New Zealand (CAANZ) has developed two forensic accounting groups which are the Business Valuation Special Interest Group (BVSIG) and the Forensic Accounting Special Interest Groups (FASIG); the latter group has been replaced by the National Forensic Accounting Committee. Recently, CAANZ has collaborated with Macquarie University to develop and administer a Forensic Accounting Specialisation. The purpose of this collaboration is to support and enhance the forensic accounting profession the practitioners in the Australian context.

The Australian educational environment is undergoing significant reform, especially in accounting education (Sciulli & Sims 2008; Freeman 2010; Pan & Perera 2012; Hancock et al. 2015). Australia has 40 universities, some among the highest ranked educational institutes worldwide (QS Quacquarelli Symonds Limited 2019). Currently, universities in Australia provide diverse offerings that range from individual or sets of courses within an accounting specialisation or major through to offering forensic accounting programs. For example, some universities provide a separate degree in forensic accounting (diploma or masters), while others teach one or two units of forensic accounting within their accounting programs (Seda & Kramer 2009; Van Akkeren et al. 2013). Therefore, the rapidly increased demand for the forensic

accounting profession and education as well as the regulatory reforms of higher education in Australia makes Australia a suitable context for this research. In the Australian context, forensic accounting has a promising future from both practical and educational perspectives. Although there is a paucity of prior research about forensic accounting within the Australian context, researchers have demonstrated a growing interest regarding forensic accounting services and there is an increasing demand for both forensic accounting graduates and forensic accounting education (Chen & Van Akkeren 2012; Van Akkeren & Tarr 2014; Van Akkeren & Buckby 2015; Tarr et al. 2016). Also, prior research revealed an unsatisfactory level of forensic accounting education offerings within the Australian universities (Van Akkeren et al. 2013).

1.2.2. Research motivations

This research has been motivated by three main issues. First, in the past 20 years, there has been an increasing number of financial crimes worldwide. These include Enron (Largay III 2002), Arthur Andersen (Kelly & Earley 2009), Xerox, BAE Systems (Van Akkeren & Buckby 2015), WorldCom (Sidak 2003), Sunbeam, Dell and Refco (Van Akkeren & Buckby 2015). In addition, similar financial scandals have occurred in the Australian context such as HIH Insurance, Harris Scarfe and One.Tel (Latimer 2003; Van Akkeren & Buckby 2015). The Association of Certified Fraud Examiners (ACFE) (2016) showed that organisations lose 5% of annual revenues to fraud and the total losses exceeded $6.3 billion, with an average loss per case of $2.7 million, with 23.2% of cases sustaining losses of $1 million or more. Forensic accounting is one of the key occupational services in this era to deal with such activities (Sanchez 2012; Peshori 2015; Mehta & Bhavani 2017). Prior researchers have indicated that organisations that have accounting staff with forensic accounting education have an increased ability to avoid financial corruption and fraud crimes (Carpenter et al. 2011).

Second, there is an increasing demand for forensic accounting services (Tiwari & Debnath 2017; Howieson 2018; Jones & Dosanjh-Zucker 2018). Subsequently, there is a corresponding increasing demand for forensic accounting educational programs and graduates with forensic, adversarial and investigative skills (Bressler 2012; Seda & Kramer 2014; Durney & Fitzpatrick 2016; Matson 2016; Wang et al. 2016). Although many universities started offering forensic accounting education, a greater number of universities have decided to delay offering forensic accounting education (Seda & Kramer 2014, 2015) while some have discontinued forensic programs previously offered. According to Huber and DiGabriele (2015a), the main reason

behind the lag in providing forensic accounting education has stemmed from the paucity of research that contributes to the development of forensic accounting educational practice. Third, the Australian educational environment has undergone a substantial transformation by setting new educational standards for accounting education in the higher education level (Freeman 2010; Kavanagh et al. 2010; Freeman & Hancock 2011). Thus, this research is motivated by the rapidly increased demand for the forensic accounting trained professionals and the corresponding educational requirements (Apostolou et al. 2010; Apostolou et al. 2013; Van Akkeren et al. 2013) and by the reforms of the higher education in Australia and worldwide (Apostolou et al. 2010; Freeman 2010; Freeman & Hancock 2011; Apostolou et al. 2013; Helliar 2013; Van Akkeren et al. 2013).

1.3. Research problem

The holistic benefits and demand for forensic accounting services increase the requirement for forensic accounting education (Tarr et al. 2016; Domino et al. 2017; Hegazy et al. 2017; Tiwari & Debnath 2017; Botes & Saadeh 2018). The recent increase of fraud, financial crimes, and scandals, has prioritised the need for specialists with more fraud investigation competencies (Sanchez 2012; Free 2015; HuberAndon, et al. 2015; Van Akkeren & Buckby 2015; KPMG 2016). Moreover, the increase in the number of complex financial lawsuits highlights the need for specialists who can provide expert testimony according to the nature of the lawsuits, court rules and procedures (Rasmussen & Leauanae 2005; Renzhou 2011; Warshavsky 2013; HuberDomino, et al. 2015). Employers in different firms, such as principals of audit firms, or executives of banks, financial consultations firms, insurance firms and government agencies are looking for graduates with forensic, investigative and adversarial skills (DiGabriele 2008a; Davis et al. 2010; McMullen & Sanchez 2010). The forensic accounting profession is dissimilar to the traditional process of statutory audit, and highlights the fact that an accountant should be able to look at the whole picture within an organisation in order to provide better analysis and solutions to firms' unstructured and vexed-problems (Owojori & Asaolu 2009; Davis et al. 2010).

As mentioned earlier, forensic accounting is a multidisciplinary specialisation (Heitger & Heitger 2008; Kresse 2008; Young 2008). Some researchers consider the nature of forensic accounting to be a challenge in being able to provide a program of study able to meet the requirements of the field (Kresse 2008; Smith & Crumbley 2009). The lack of an accepted

accreditation channel and educational programs for forensic accounting influence the forensic accounting profession's credibility and public recognition (Huber 2013a, 2013c). The review of forensic accounting literature has revealed many obstacles facing the development paths of forensic accounting education (Kleinman & Anandarajan 2011). These obstacles include the lack of qualified teachers (Rezaee & Burton 1997), lack of interest from students (Seda & Kramer 2009), lack of flexibility in the accounting curriculum (Rezaee & Burton 1997; Seda & Kramer 2009), lack of forensic accounting textbooks (Young 2008) and lack of universities' financial capacity to offer such courses or programs of study (Rezaee & Burton 1997).

Forensic accounting courses offered by Australian universities are designed to equip students with rudimentary ideas about forensic accounting practice. There is a diverse range of offerings which include courses within undergraduate or postgraduate programs and some stand-alone courses (Van Akkeren et al. 2013). Alternatively, various universities have opted to delay teaching forensic accounting courses or programs of study (Seda & Kramer 2014). Additionally, there is no approved or recommended strategy for developing the curricula and pedagogies (Smith & Crumbley 2009). The curriculum design appears to be driven by individualistic philosophical opinions toward the best approach (Smith and Crumbley, 2009).

Most of the accountants gain the forensic accounting experience form their jobs (Hegazy et al. 2017; Botes & Saadeh 2018; Howieson 2018). However, forensic accounting depends on the integration of knowledge from different fields (Fleming et al. 2008; Heitger & Heitger 2008; Kresse 2008; Kern & Weber 2016; Rezaee et al. 2016). Therefore, work experience is not enough to equip the practitioners with the full range of knowledge that the practitioners need to provide the forensic accounting services successfully. Accordingly, universities may play a vital role in equipping forensic accounting with at least the fundamental knowledge of forensic accounting. Universities can tailor forensic accounting courses that combine the required knowledge including law, criminology, IT, accounting and auditing.

In this thesis, the inquiry starts by considering the first problem, which is the inconsistences of the type and nature of forensic accounting education within Australian universities. Subsequent, inquiries in the thesis are devoted to understanding the formation process of forensic accounting curricula and features of forensic accounting pedagogies within the Australian context. Therefore, qualitative methods are used as this method provides the opportunity to develop a deep understanding of the issues related to forensic accounting

education (Morgan & Smircich 1980; Patton 1990; Cresswell 1998; Denzin & Lincoln 2005; Bowen 2009; Silverman 2015).

1.3.1. Knowledge gap

Much of the research related to forensic accounting education describes the current USA forensic accounting programs (Rezaee & Burton 1997; Fleming et al. 2008; Heitger & Heitger 2008; Kranacher et al. 2008; Kresse 2008; Ramamoorti 2008; Young 2008; Seda & Kramer 2014, 2015; Matson 2016; Rezaee et al. 2016; Wang et al. 2016). Prior researchers have focused their research on four domains. First, presenting descriptive statistics about the universities that teach forensic accounting (Van Akkeren et al. 2013; Rezaee et al. 2014; Seda & Kramer 2014; Wang et al. 2016). Second, suggesting components for forensic accounting curricula in a normative way (Curtis 2008a; Fleming et al. 2008; Heitger & Heitger 2008; Kranacher et al. 2008; Kresse 2008; Ramamoorti 2008; Young 2008). Third, suggesting pedagogical methods for teaching forensic accounting students (LaSalle 2007; Brickner et al. 2010; Dee & Durtschi 2010; Laufer & Betzer 2010; Gates et al. 2011; Kleinman & Anandarajan 2011; DiGabriele 2012; Lehmann 2015; DiGabriele & Lohrey 2016; Jalilvand & Kostolansky 2016; Jepperson 2016; Kern & Weber 2016; Durtschi & Rufus 2017; Lehmann & Heagy 2017; Jones & Dosanjh-Zucker 2018). Fourth, exploring and examining the required skills for forensic accounting (DiGabriele 2008a; Davis et al. 2010; McMullen & Sanchez 2010; Tiwari & Debnath 2017).

Despite an increased interest in forensic accounting, it is surprising that very little empirical research has been conducted in the Australian settings and very few studies have focused on the forensic accounting profession (Marychurch 2006; Chen & Van Akkeren 2012; Van Akkeren et al. 2013; Van Akkeren & Tarr 2014; HuberAndon, et al. 2015; Van Akkeren & Buckby 2015; Tarr et al. 2016). In addition, very few papers pay attention to forensic accounting education within the Australian universities (Marychurch 2006). Rebele and Pierre (2015) noted the gap between research and application as the main issue with accounting research. Consequently, previous literature provides a path to examine what has already been investigated in the forensic accounting domain. Additionally, Botes and Saadeh (2018) gave recommendations for accounting educational institutions to focus their attention on forensic accounting education (Rezaee et al. 1992; DiGabriele 2008a; Kranacher et al. 2008; Seda & Kramer 2014; Van Akkeren & Tarr 2014; Matson 2016).

There is a growing need to explore different aspects of forensic accounting education in Australian universities. Hence, soliciting stakeholders' (practitioners and academics) perspectives related to the desired curriculum model and the pedagogical approach to forensic accounting education will provide valuable evidence to the forensic accounting profession, and education providers in Australia. The key differentiating points in this study is that it investigates the reality of curricula and pedagogies in the Australian context, based on what universities currently provide and the perspective of forensic accounting practitioners and educators. Therefore, this thesis provides important contributions to the development of forensic accounting curricula and pedagogy.

Overall, the literature has reveals inconsistency in forensic accounting curricula and pedagogies. Despite the increasing interest in forensic accounting research little research has been conducted in the Australian context. An exploration of the current Australian forensic accounting educational practice is conducted to address the first part of this research problem. This study reveals that there are variations in curricula design and content knowledge with an epistemological uncertainty evident within the forensic accounting specialisation. Furthermore, the first part of this study reveals uncertainty and inconsistencies in the use of pedagogical methods to teach forensic accounting students. Therefore, in the second phase, two further investigations are undertaken to explore these problems. First, an exploration to understand the curricula formation process of forensic accounting. This analysis helps to identify the factors that influence the transformation of forensic accounting knowledge into university programs and courses. Second, an exploration to understand the forensic accounting pedagogies features and provide insights into the usefulness and effectiveness of various teaching methods in forensic accounting. The next two subsections illustrate and crystallise the link between the research problem and research aim, objectives and questions.

1.3.2. Research aim and objectives

This thesis aims to develop an understanding of the educational practice (curricula and pedagogies) in the forensic accounting discipline. In terms of the curricula, this research explores the process in which the knowledge of forensic accounting is transformed into the teaching curriculum and examines the factors that influence this process. In terms of pedagogies, this research explores not only the features of existing forensic accounting pedagogies but also identifies those that may enhance student understanding of forensic accounting knowledge. The Australian context is selected because of the increasing attention

given to forensic accounting in Australia from both the professional and educational bodies. This research explores the current educational practice by analysing educational documents such as forensic accounting curricula, handbooks and syllabi. In addition, analysis of the perspectives of forensic accounting practitioners and forensic accounting academics is conducted. This thesis incorporates the following interrelated objectives:

1. To explore the current educational practice (curricula and pedagogies) of forensic accounting in Australian universities.
2. To understand the process in which forensic accounting curricula are formatted from the perspective of the elite forensic accounting practitioners and academics.
3. To understand the features of forensic accounting pedagogies from the perspective of the elite forensic accounting practitioners and academics.
4. To contribute to the body of forensic accounting literature by exploring educational aspects which need further exploration.

1.3.3. Research question

What remains to be explored, however, is the nature of forensic accounting education in the Australian context and how forensic accounting knowledge can be transformed into curricula via pedagogies. An extensive literature review and the use of specific theoretical lenses have led to three research questions. The development of the first research phase and the findings from this phase led to the development of the second research phase. Recently a dramatic rise in the availability of forensic accounting education and a major paradigm shift among colleges and universities has occurred (Seda & Kramer 2014). Seda & Kramer (2014) reported on 58 forensic accounting degrees in the U.S. context in 2014, while Buckhoff and Schrader (2000) reported on 13 forensic accounting degrees in the U.S. context in 2010. Despite this increase in forensic accounting education, there are universities still lagging behind in adopting such programs (Matson 2016). Notwithstanding, there seems to be no consensus on how to uniformly integrate forensic accounting into the accounting curricula (Smith & Crumbley 2009; Seda & Kramer 2014). Therefore, the first paper in this thesis has explored the directions that the Australian universities have undertaken in teaching forensic accounting. The following research questions are addressed:

R.Q.1 What are the core curricula components and knowledge? And, what are the nature and types of integrated interdisciplinary knowledge that are included in forensic accounting curricula components? (first paper, chapter 3 of the thesis)

The first paper conducts an analysis of the data of Australian universities' offerings and has provided an understanding of the core and interdisciplinary topics of forensic accounting curricula. The findings disclose a lack of emphasis on core forensic accounting knowledge components such as business valuation and IT forensics. The findings also revealed variations in curricula design and content knowledge. The findings demonstrate an epistemological uncertainty within the forensic accounting education discipline and suggest a need to continue empirical research in forensic accounting curricula and pedagogy.

The second paper provides an understanding of the reasons why there is a variation of the forensic accounting curricula components, how forensic accounting curricula is structured, and how forensic accounting knowledge is transformed through curricula. The following research question has been addressed:

R.Q.2 What influences the transformation of forensic accounting knowledge into the curricula? (second paper, chapter 4 of the thesis)

The findings from the second paper reveal an inconsistances related to the nature and purpose of forensic accounting within tertiary courses and programs of study, and that the forensic accounting curricula invite a series of teleological, epistemological, and ontological positions. The third paper further explores the feature of forensic accounting pedagogies and explores the following research question:

R.Q.3 What are the features and the signature[3] of forensic accounting pedagogies? (third paper, chapter 5 of the thesis)

1.4. Theoretical underpinnings

In the theoretical realm of education, educationists have contributed to a wide range of theories that can explain the curricula content and pedagogical phenomenon (Dewey 1938; Tyler 1949; Kolb 1984). There is no single theory that fits perfectly to cover all this study's research questions. Therefore, multiple theories are used to inform and interpret the data and answer the

[3] Shulman (2005a) argues that signature pedagogies represents the unique methods and modes of teaching linked with the disciplines. More discussion about the term signature is presented in chapter 2 and 5.

research questions. The theories are the pedagogic device (Bernstein 1990, 1996, 1999, 2000, 2003), experiential learning (Kolb 1984; Kolb & Kolb 2005, 2006; Kolb 2015) and signature pedagogies (Shulman 2005a, 2005c, 2005b, 2008).

This thesis evaluates the formation and transformation of forensic accounting knowledge into the curricula content within higher education. Bernstein (1990, 1996, 2000, 2003) introduced the pedagogic device theory, which was described as "the ensemble of rules or procedures via which knowledge is converted into classroom talk, curricula and online communication" (Singh 2002, 571). The use of the pedagogic device theory provides researchers with definite criteria/rules to explain the process of knowledge creation and transformation to curricula and the relations of powers, which control the constituting process of knowledge (Bernstein 1990, 1996, 2000, 2003). For example, the concept of knowledge structure describes the structure of discipline's knowledge and therefore has implications for the teaching and learning within the discipline (Myers, 2016). For the forensic accounting discipline, this mean knowledge structures, made visible by using established theoretical frameworks, should support professional development and assist in evaluating the progression of students' knowledge gained through the curriculum (Kinchin, 2019).

This thesis, therefore, develops an understanding of the structure of forensic accounting curriculum within the Australian higher education context and uses Bernstein's theoretical lens in chapter 4 (second paper). The use of Bernstein's theory gives more depth in terms of interpretation of the research data. Specifically, the interpretation of the data when it is underpinned based on Bernstein's theory because this allows an understanding the factors that influence the formation process of forensic accounting curricula. Furthermore, using Bernstein's theory to underpin the study allows an understanding of the forensic accounting knowledge structure, which directly influences the forensic accounting curricula.

This method is consistent with Pouliot's (2012) comments that there are three stages of research to observe practice theory and these have been adopted for this study. The first stage is the need to access practice (p. 49), while the second stage requires practices to be 'seen', 'talked about' (interviews) or 'read' (textual analysis), practical logics can be interpretively inferred through a variety of methods (p.48), and the construct of the positional logic of practices (i.e., positional construction). These steps are used across chapter 3, 4, and 5.

In terms of theoretical explanations for the pedagogies, this thesis used two theories. First, the theoretical lens of experiential learning (Kolb 1984; Kolb 2015) which presents logical

reasoning in the structuring and sequencing of the pedagogy that satisfies a broad range of students (Holtzblatt & Tschakert 2011; Jelinek 2017). The theory also contains a new focus on the quality of experience in learning (Kolb 2015; Marriott et al. 2015). Second, the theoretical lens of signature pedagogies, which symbolise the cultures of professional work, and when used contribute to the student's early socialisation into a field (Shulman 2005a, 2005c, 2005b, 2008). Therefore, it is imperative to examine the signature pedagogies related to the profession. Consequently, this will lead to know how teaching and learning might be enhanced to encompass the skills and knowledge requisite for the profession. This thesis relies on the concept of experiential learning and signature pedagogies in examining the teaching methods that would enhance forensic accounting education. These theories will be discussed in more depth in chapter 5 (third paper). The use of experiential learning and signature pedagogies theories provide a theoretical framework that gives more depth in the interpretation of the research data. Thus, this research generate an understanding of how teaching of forensic accounting knowledge might be enhanced using an appropriate pedagogical tools.

1.5. Methodological issues

The methodology is a systematic and theoretical evaluation of the methods employed in a research field (Locke et al. 2009; Creswell 2013; Silverman 2015) and is the process leading to developing results based on what the researcher finds throughout their research steps (Guba & Lincoln 1994; Perry et al. 1997). An in-depth illustration of the methods used is presented in the next subsections. Particularly, this section highlights some methodological issues including previous research approaches, the nature of this research, sampling methods, validity and reliability and ethical considerations.

1.5.1. Previous approaches

As indicated earlier, there are some forensic accounting researchers who have provided knowledge related to forensic accounting education (Rezaee et al. 1992; Peterson 2003; Fleming et al. 2008; Heitger & Heitger 2008; Kranacher et al. 2008; Kresse 2008; Ramamoorti 2008; Young 2008; Seda & Kramer 2014, 2015; Matson 2016; Rezaee et al. 2016; Wang et al. 2016). In terms of the methodological approaches adopted in forensic accounting literature, few studies have surveyed the practitioners and academics perspective toward the education of forensic accounting students (Rezaee & Burton 1997; Crumbley et al. 2004; Bierstaker et al.

2006; DiGabriele 2008a; Daniels et al. 2013; Sofianti et al. 2014; Othman et al. 2015; Van Akkeren & Buckby 2015).

Rezaee et al. (2004), Seda and Kramer (2014) and Seda and Kramer (2009) have reviewed the universities' websites in order to provide a descriptive analysis of forensic accounting courses among the universities in the USA. Huber and DiGabriele (2015b) analysed and classified 366 papers published in the leading forensic accounting journals and other journals which publish forensic accounting studies. Huber and DiGabriele (2015b) found a concentration on quantitative methods and encourage using a full spectrum of research methods in forensic accounting research. In addition, Huber and DiGabriele (2015b, 105) emphasise:

> *Forensic accounting is a confluence of many different disciplines such as law, auditing, accounting, finance, economics, psychology, sociology and criminology. As a consequence, forensic accounting research should embrace the diversity of topics. Similarly, social science research regularly uses qualitative methods such as: narrative inquiry, research interviews (structured/unstructured), content analysis, focus groups and discourse analysis (Meyers, 2013), and research in forensic accounting should likewise utilize all research tools and methods at their disposal.*

1.5.2. Nature of the study

Because of the paucity of qualitative studies in forensic accounting (Hegazy et al. 2017; Botes & Saadeh 2018), this study adopts an interpretative philosophy through the use of qualitative inquiry (Morgan & Smircich 1980; Guba & Lincoln 1985; Chua 1986; Denzin 2008; Yin 2009; Silverman 2015). This research develops an understanding of curricula and pedagogical issues in order to enhance forensic accounting education among Australian universities. Based on the researcher's ontological, epistemological and methodological assumptions, which are subjective in nature (Morgan & Smircich 1980; Guba & Lincoln 1985; Guba & Lincoln 1994; Johnson & Duberley 2000). The adopted methodology stands on the ideographic types of research (Guba & Lincoln 1985; Gaffikin 2008) and the constructivism philosophy (Creswell 2013). This research approach rests on the assumption that social reality is subjectively formulated and organised in the environment in which it is located and that social reality is contextualised through human interaction (Morgan & Smircich 1980; Dillard 1991).

This thesis can be seen as an exploratory inquiry (Yin 2009) as its main aim is to explore different aspects of forensic accounting education in Australian universities. This aim can be achieved by conceptualising, measuring and analysing data on the offerings of forensic accounting education through non-numerical data. This thesis comprises multiple qualitative

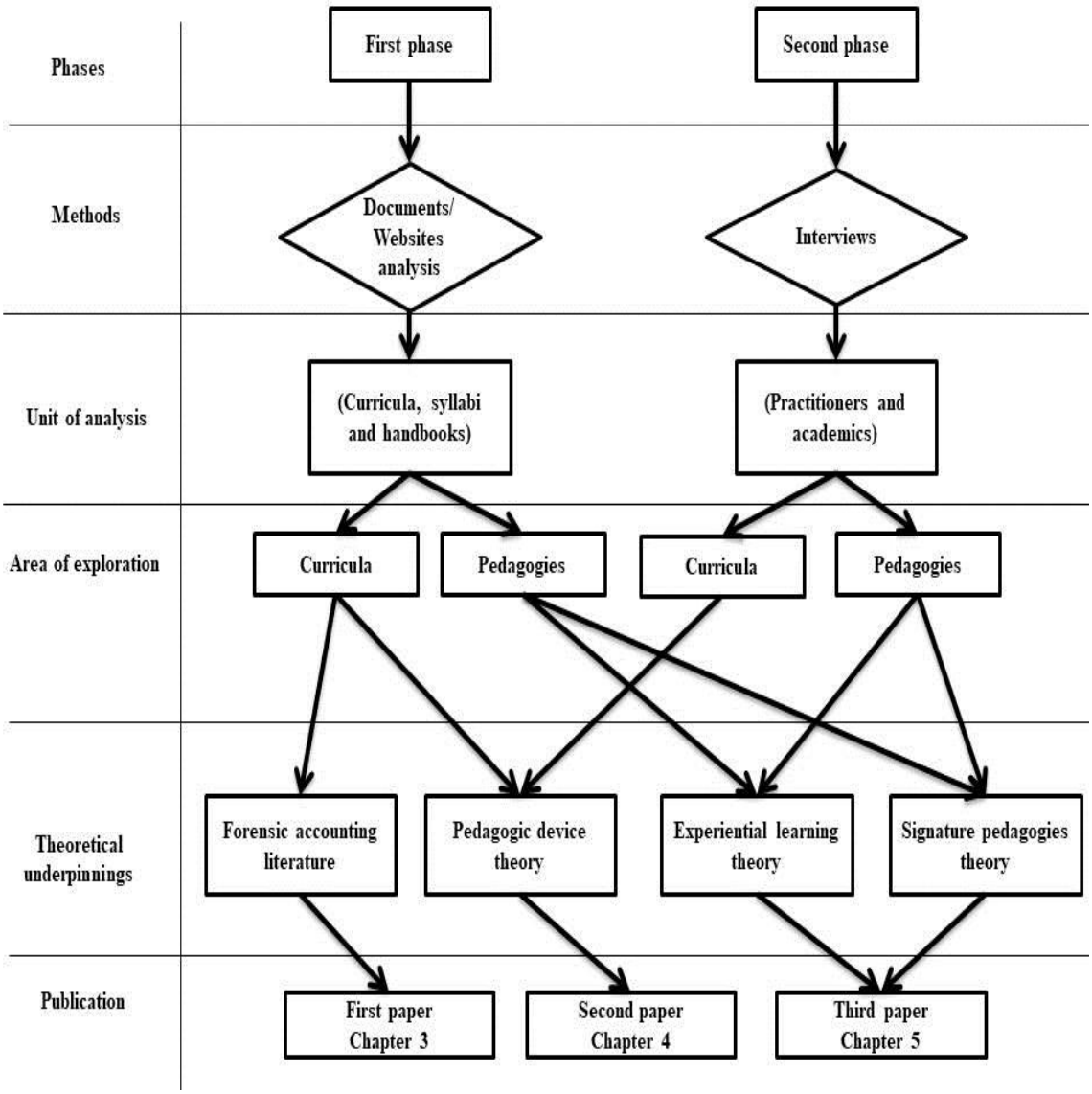
methodologies to meet more specific research questions and reach an accurate conclusion of the issue being studied. Therefore, this study uses semi-structured interviews (Gaskell 2000; Rao & Perry 2003; Minichiello et al. 2008; Qu & Dumay 2011; Silverman 2015) and document analysis (Bowen 2009; Silverman 2015). Qualitative data from interviews with practitioners and academics and qualitative data from Australian universities websites were collected for the purpose of identifying factors that impact on current and future forensic accounting education.

1.5.3. An overview of the research phases

This research involves two distinct phases (figure 1.1). The aim of the first phase is to explore the current forensic accounting practice (curricula and pedagogies[4]) through analysing the forensic accounting curricula handbooks and syllabi. The second phase utilises interviews with the forensic accounting practitioners and academics; the second phase aimed to understand the process of forensic accounting knowledge transformation into curricula and through pedagogies.

[4] Pedagogies have been found on the websites of the universities but not enough to generate insights and empirical evidence. Therefore, this thesis has explore the pedagogies of forensic accounting through examining the data from the universities websites and from the perceptions of academics and practitioners through the interviews.

Figure 1.1: Research phases



Data for this thesis has been collected during April 2017 and January 2018. The collection of the websites data has taken a place firstly. The universities websites has been reviewed during April 2017 and May 2017. The data from interviews has been collected after collecting all relevant data from the website and performing the analysis for this data set. The interviews process has been started to solicit the perspective of the practitioners group. The interviews with the practitioners lasted for 3 months during July 2017 and September 2017. Final data collection step was to solicit the perspective of the forensic accounting academics which lasted 3 months during November 2017 and January 2018.

Bowen (2009, 27) defines document analysis as "a systematic procedure for reviewing or evaluating documents—both printed and electronic (computer-based and Internet-transmitted)

material. Like other analytical methods in qualitative research, document analysis requires that data be examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge." Document analysis methods are frequently applied with other qualitative methods to achieve the triangulation of data (Denzin, 1994). The qualitative researchers are anticipated to use at least two sources of data in order to generate convergence and corroboration through the application of multiple data sources and methods. In this study, data from document (Internet-transmitted) have been triangulated with semi-structured interviews to generate full understanding of the forensic accounting education in the Australian context.

Longhurst (2003, 6) defines interviews as "discussions, usually one-on-one between an interviewer and an individual, meant to gather information on a specific set of topics. Interviews can be conducted in person or over the phone. Interviews differ from surveys by the level of structure placed on the interaction." As in any research method, both document analysis and semi-structured interview have a strengths and weaknesses. Therefore, strength and weakness points of each method is illustrated as the following

Bowen (2009, 31) stated that the advantages of the document analysis are as follows:

- "Efficient method: Document analysis is less time-consuming and therefore more efficient than other research methods. It requires data selection, instead of data collection.
- Availability: Many documents are in the public domain, especially since the advent of the Internet, and are obtainable without the authors' permission. This makes document analysis an attractive option for qualitative researchers. As Merriam (1988) argued, locating public records is limited only by one's imagination and industriousness. An important maxim to keep in mind is that if a public event happened, some official record of it most likely exists.
- Cost-effectiveness: Document analysis is less costly than other research methods and is often the method of choice when the collection of new data is not feasible. The data (contained in documents) have already been gathered; what remains is for the content and quality of the documents to be evaluated.
- Lack of obtrusiveness and reactivity: Documents are 'unobtrusive' and 'non-reactive'—that is, they are unaffected by the research process. (Previous studies found in documents are not being considered here.) Therefore, document analysis counters

the concerns related to reflexivity (or the lack of it) inherent in other qualitative research methods. With regard to observation, for instance, an event may proceed differently because it is being observed. Reflexivity—which requires an awareness of the researcher's contribution to the construction of meanings attached to social interactions and acknowledgment of the possibility of the investigator's influence on the research—is usually not an issue in using documents for research purposes.

- Stability: As a corollary to being non-reactive, documents are stable. The investigator's presence does not alter what is being studied (Merriam, 1988). Documents, then, are suitable for repeated reviews.
- Exactness: The inclusion of exact names, references, and details of events makes documents advantageous in the research process (Yin, 1994).
- Coverage: Documents provide broad coverage; they cover a long span of time, many events, and many settings (Yin, 1994)."

In contrast, Bowen (2009, 32-32) shows that Document analysis suffers from the following disadvantages:

- "Insufficient detail: Documents are produced for some purpose other than research; they are created independent of a research agenda. (Again, previous studies located in documents are not being considered here.) Consequently, they usually do not provide sufficient detail to answer a research question.
- Low retrievability: Documentation is sometimes not retrievable, or retrievability is difficult. As Yin (1994) has noted, access to documents may be deliberately blocked.
- Biased selectivity: An incomplete collection of documents suggests 'biased selectivity' (Yin, 1994, p. 80). In an organisational context, the available (selected) documents are likely to be aligned with corporate policies and procedures and with the agenda of the organisation's principals. However, they may also reflect the emphasis of the particular organisational unit that handles record-keeping (e.g., Human Resources)".

Stysko-Kunkowska (2014, 49) stated that the advantages of the interviews are as follows:

- "Detailed, in-depth data (especially as compared to group interviews)
- more information from one person
- more in-depth info from one person
- more time for one person (to express and explain opinions)

- opinions are attributed directly to one person
- opinions isolated from influence of other discussion members
- Observation of non-verbal communication may increase richness of information
- Sense of privacy and confidentiality
- More "difficult" criteria of participant recruitment may be applied (compared with group interviews)
- Easy to be organized
- More direct, overt purpose (as compared with observation and participant observation, thus less raises ethical issues)"

In contrast, Stysko-Kunkowska (2014, 49) shows that interviews suffer from the following disadvantages:

- "High influence of an interviewer on a flow of an interview
- Fast tiredness of the interviewer
- Limited possibility of observation by an external researcher
- Less info in the same time (as compared with group interviews)
- Detailed analysis is more time consuming
- Mostly fewer participants (due to costs and time)
- Difficult to analysis and interpretation due to a hidden message"

1.5.4. Sample size

Qualitative methods are appropriate to account for rich and non-numerical data to determine common patterns and themes (Schilling 2006). Put another way; the qualitative inquiry is adopted for any data collection system (interviews) or data analysis system (classifying data) that delivers or uses non-numerical data (Silverman 2015). In qualitative research, there are no strict guidelines or rule of thumb for researchers to pre-determine the sample size. Qualitative researchers are mainly concerned with achieving saturation point which means that there is no incremental information gained from adding new participants to the interview group (Bowen 2009; O'Reilly & Parker 2013; Fusch & Ness 2015). Methodologists have debated widely on the adequate size to achieve saturation from qualitative data; some of them argue that saturation is possible from a small sample size such as research with five interviews. Others have related the sample size to the nature of qualitative research; for example, Creswell (2013, 239) stated:

> *Aside from the small number that characterizes qualitative research, how many sites and participants should you have? First of all, there is no specific answer to this question; although I have taken the position (Creswell, 2013) that sample size depends on the qualitative design being used (e.g., ethnography, case study). From my review of many qualitative research studies I have found narrative research to include one or two individuals; phenomenology to typically range from three to ten; grounded theory, twenty to thirty; ethnography to examine one single culture-sharing group with numerous artifacts, interviews, and observations; and case studies to include about four to five cases.*

Consequently, qualitative research does not require large sample sizes for interviews (Fusch & Ness 2015). The major issue in qualitative data collection is to access rich data with a thick description that embrace a broad array of perspectives and diverse portrayal of the matter being examined (O'Reilly & Parker 2013).

In this thesis, purposive and snowballing methods to sampling are used (Silverman 2015). Sampling techniques enable the researcher to recruit participants who are most likely to be interested and involved in forensic accounting practice and education. The interviewees comprise two groups; practitioners and academics. Prospective participants are identified via a website scan of forensic accounting firms and Australian universities who offer forensic accounting education to build a contact record for the potential interviewees. Requests to participate in the interview process were made via telephone and emails. Snowballing is employed at the end of each interview as participants were requested to recommend further participants. In total, 18 interviews were conducted with 9 forensic accounting practitioners and 9 forensic accounting academics in the Australian context. Furthermore, this study analysed the educational documents of forensic accounting courses within Australian universities; mainly handbooks, curricula and syllabi. The sample includes all Australian universities. Data collection methods commence by analysing all Australian universities websites. Among 40 universities, 15 universities provide some forensic accounting education. The university websites employed different ways to advertise courses and degrees.

1.5.5. Validity and reliability of the analysis

1.5.5.1. First paper

A first step in this research study was to include a building coding scheme to understand the core and interdisciplinary components of forensic accounting education. The review of literature has revealed as a set of topics that prior researchers have considered as either a core component or interdisciplinary component. Both the core and interdisciplinary components

have been deemed as a theme in the first paper of this study. Conbsequently, seven themes haveemerged from the first paper's data. The seven themes that evolved from the data for paper 1 are accounting and auditing knowledge,; fraud, law, business valuation; IT forensics, ethics and sociology, criminology and psychology. Table 1.1 provides a summary ofstudies that encompass the same themes and theses have been sued to justify the development of the coding scheme. Moreover, the first paper discusses the underlying themes in details.

Table 1.1 Classification of literature into themes

The theme	Source	Authors
Accounting and auditing knowledge	5	(Rezaee & Burton 1997) (Peterson 2003) (Rezaee et al. 2004) (Ramaswamy 2007) (Carpenter et al. 2011)
Fraud	5	(Peterson 2003) (National Institute of Justice 2007) (Curtis 2008) (Fleming et al. 2008) (Kranacher et al. 2008)
Law	2	(Curtis 2008) (Heitger & Heitger 2008)
Business valuation	2	(DiGabriele 2008) (DiGabriele 2009)
IT forensics	2	(Fleming et al. 2008) (Marshall & Cali 2015)
Ethics and sociology	3	(Heitger & Heitger 2008) (Kresse 2008) (Ramamoorti 2008)
Criminology and psychology	3	(Fleming et al. 2008) (Kresse 2008) (Ramamoorti 2008)

Subsequently, coding of data was performed consistent with the imposed seven themes. The data was coded using NVIVO. To complete the coding stages, two coding steps were employed; first and second coding stage. The frequency of occurrence for each theme was calculated to gauge the validity and reliability of the coding process. Cohen's Kappa technique has been used to ascertain the validity and reliability of the coding process. Cohen's Kappa score is the coefficient for the proportion of agreement (Cohen 1960) and is used to generate objective evidence on the coding stages. To calculate the Cohen's Kappa score, an item was coded "1" if it was appeared in both of the first and second coding stages and was appeared under the same theme. Item "0" was coded if otherwise. The first paper used the percentage of the agreement to measure the interrater reliability between the two coding results (McHugh 2012), which is considered suitable to test the values consist only of binary data. As presented in table 1.2, the total percentage of agreement for the codes of interest in this study was (90.85%), which is considered as a perfect agreement.

Table 1.2: percentage of agreement for each themes

The theme	percentage of agreement
Accounting and auditing knowledge	91%
Fraud	89%
Law	82%
Business valuation	100%
IT forensics	87%
Ethics and sociology	93%
Criminology and psychology	94%
Total	90.85%

1.5.5.2. Second and third paper

Increasing demand for qualitative research has led to increasing the use of valid analysis tools that are suitable to generate inferences from qualitative data (Aronson 1995). Thematic analysis is one tool that has received a significant amount of attention from qualitative researchers (Aronson 1995; Attride-Stirling 2001; Tuckett 2005; Braun & Clarke 2006). In this research, thematic analysis has been used to analyse the collected data (Braun & Clarke 2006).

To understand the philosophical underpinning of thematic analysis, it is imperative to first understand the philosophical traditions of qualitative research (Braun & Clarke 2006). Qualitative research aims to comprehend and represent the actions and experiences of people while they engage, interact, and live through different circumstances, conditions and situations (Elliott et al. 1999; Creswell 2013; Silverman 2015). Thus, qualitative researchers generally take an interpretive and constructivism philosophical perspective (Morgan & Smircich 1980; Guba & Lincoln 1985; Perry et al. 1997; Creswell 2013). Qualitative research encompasses many traditions, such as "phenomenological, hermeneutic, pragmatic, critical, and postmodernist traditions". All of these encourage the subjective epistemological approach to knowledge development (Elliott et al. 1999).

Braun and Clarke (2006, 79) define thematic analysis as "a method for identifying, analysing and reporting patterns (themes) within data". According to Braun and Clarke (2006), researchers may conduct thematic analysis in both realist/essentialist and constructionist paradigms. Therefore, this research has used thematic analysis at a constructivist level to analyse and interpret the data from individual accounts that have been gathered within the Australian forensic accounting education context. In this study, thematic analysis has been used following the steps suggested by Braun and Clarke (2006) as shown in table 1.

Table 1.3: "Phases of thematic analysis" adapted from Braun and Clarke (2006, 87)

Phase	**Description**
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

NVIVO is a computer-assisted qualitative data analysis software (CAQDAS) and a code-and-retrieve index system. NVIVO is designed to allow users to conduct advanced analyses of electronic text data (Durian 2002). The use of NVIVO in this thesis supported the researcher in managing and arranging as well as the coding of qualitative data in a systematic manner. NVIVO was used to code the data from the websites and interviews. Nodes were attached to sections within the text. Nodes were used in this study to store coding about topics, concepts and themes. NVIVO was also used to conduct analyses such as search texts, text-string searches and text pattern searches. Another use of NVIVO was to develop and design thematic maps.

In thematic analysis, researchers mainly focus on one level as a starting point, at this level researchers aim to summarise and describe the content of the data from a semantic approach to the data (Patton 1990). Braun and Clarke (2006, 95) assert, "A good thematic analysis needs to make sure that the interpretations of the data are consistent with the theoretical framework." At the second level, researchers attempt to interpret the data from the theoretical lenses in order to theorise the significance of the broader meanings and implications of the data. Another way to develop a platform for interpreting the data is to guide the interpretation by the evidence and directions of the previous literature (Hayes 2000; Frith & Gleeson 2004). Braun and Clarke

(2006, 84) claim that "researchers cannot free themselves of their theoretical and epistemological commitments, and data are not coded in an epistemological vacuum". In this thesis, three interconnected and linked articles have been conducted to cover curricular and pedagogical issues of forensic accounting in the Australian context. These articles have extend the pre-existing literature related to forensic accounting education (Rezaee & Burton 1997; National Institute of Justice 2007; Ramaswamy 2007; Curtis 2008; Heitger & Heitger 2008; Kranacher et al. 2008; Kresse 2008; Ramamoorti 2008; Smith & Crumbley 2009; Kleinman & Anandarajan 2011; Daniels et al. 2013; Lawson et al. 2013; Van Akkeren et al. 2013; Seda & Kramer 2014; Kern & Weber 2016; Hegazy et al. 2017; Tiwari & Debnath 2017; Botes & Saadeh 2018; Howieson 2018). The theoretical frameworks adopted include the pedagogic device (Bernstein 1990, 1996, 1999, 2000, 2003), experiential learning (Kolb 1984; Kolb & Kolb 2006; Kolb 2015), and the signature pedagogies (Shulman 2005a, 2005b, 2005c, 2008).

1.5.6. Ethical considerations

In all types of scientific inquiry, ethics approval must be obtained whenever the research involves data from human individuals. The ethical code of conduct for the researchers is vital to ensure that the researcher meets the different ethical aspects in all stages of the research. Social science researchers are most concerned with the confidentiality of participants of the research. Therefore, the researcher should ensure that the identity of the participants is not revealed (Cooper & Emory 1995). In addition, researchers have to protect the dignity and welfare of those who, in any way, may become affected by participating in the research (Guba & Lincoln 1985; Guba & Lincoln 1994)

Due to the involvement of human subjects in the second stage of this research, this research abides by the guidelines of Human Research Ethics Committees (HREC) at the University of Southern Queensland. Following a strict ethical application, the researcher has met all the ethical requirements before commencing in the data collection process (Approval No. H17REA008). The researcher maintained ethical conduct during all research stages that include a collection of data; analysis; and publication of data as well (Silverman 2015). All names of the interviewees and their locations have been disguised to maintain confidentiality. Participants were allowed to read the scope of the research before engaging as a voluntary participant in the research. The signed informed consent forms, the interviews, audio recordings and transcriptions are kept in a locked filing cabinet as required by the university research committee and will be destroyed according to research protocols.

1.6. Importance and contribution of the research

The importance of this exploratory research stems from three reasons. First, international accounting associations encourage incorporating forensic accounting education within the accounting education programs. These accounting bodies include the Association of International Certified Professional Accountants (AICPA), the Association of Certified Fraud Examiners (ACFE) and the Association to Advance Collegiate Schools of Business (AACSB). In addition, professional accounting associations in Australia encourage forensic accounting education such as the CPA Australia, the Institute of Public Accountants (IPA), and the CAANZ. Second, prior researchers have shown a growing interest in the provision of forensic accounting services within the job market (Van Akkeren et al. 2013; Hegazy et al. 2017; Howieson 2018). However, there appears to be a scarcity of forensic accounting education that captures the link between the new graduates' competencies and the expectations of employers (Carnes & Gierlasinski 2001; Palmer et al. 2004; DiGabriele 2008a; McMullen & Sanchez 2010). Third, there is a gap in accounting education research related to the forensic accounting curricular and pedagogical approaches.

This thesis contributes to forensic accounting literature by providing an understanding of the curriculum formation process. The factors that have been uncovered in the fourth chapter illustrate what might hinders the universities to offer forensic accounting courses. In addition, this thesis provides an understanding of the usefulness of varied pedagogical tools to be used in forensic accounting classrooms. The pedagogical approached has been uncovered in the fifth chapter including the usefulness of the experiential learning methods and the usefulness of traditional learning methods.

This thesis provides theoretical contributions by providing a theoretical explanation of how curriculum formation process could be influenced by various factors including the educators' epistemological beliefs, the universities benchmarking and the knowledge structure. In addition to more factors that are relevant to forensic accounting education, these factors are uncovered in the fifth chapter. Another theoretical contribution is included in the fifth chapter which report on the usefulness of exertional learning approach to teach a discipline with high professional level such as forensic accounting. In addition, the fifth chapter provide an examination of the signature pedagogies of forensic accounting.

1.7. Thesis outline

This thesis consists of an introduction which highlights the research background, introduces the relevant literature, statement of problem, theoretical framing, research design, research importance and thesis outlines. Chapter 2 of this thesis consists of a review of the forensic accounting literature and introduces the theoretical framework. It is acknowledge that the series of articles and collaborate workshops (e.g., Freeman 2010; Freeman & Hancock 2011, Hancock et al. 2015) related to the Australian Accounting Learning Standards developed have occurred arcoss the past decade and have made a valuable contributed to the accoutning degree programs and indivudal course content and asessment, However, while the fundamental six minimum accoutning learning standards should be incorproated in any assessment items of foreinsic accounting courses, the scope of this study focuses on content of foreinsic accounting currucula and pedagogy. Chapter 3, 4, and 5 provide three paper produced from this research. Paper 1 contanins the content of chapter 4, which has been published in a leading US foreinsic accoutning specialised journal. The remainign two paper, which are the content of chpaters 4 and 5, have be submitted to refereed academic journals with the aim of fulfiling the research aim and objectives.

The ***second chapter*** provides empirical evidence from previous studies about the national and international forensic accounting profession, skills, knowledge, curriculum design and pedagogical practice. In addition, the second chapter introduces the three theories that have been used to interpret the data and answer the research questions. The overview of the used theories is provided after a justification of the research philosophy, which includes an illustration of the researcher's ontological, epistemological and methodological assumptions.

The ***third chapter*** introduces the first article: ***Forensic Accounting Core and Interdisciplinary Curricula Components in Australian Universities: Analysis of Websites***. This publication addresses the first question and illustrates the structure of forensic accounting curricula within the educational programs offered by Australian universities. Findings from this paper suggest that there is a lack of emphasis on law knowledge, business valuation, and IT forensic integration. The courses emphasise fraud as core content knowledge, while criminology and ethics are interdisciplinary components. This article offers an understanding of the core and interdisciplinary topics of the forensic accounting curricula.

The ***fourth chapter*** introduces the second article: ***Curriculum Formation: A Case Study from Forensic Accounting,*** which seeks to address a theoretical question in a specific context; what influences the transformation of forensic accounting knowledge into the curricula? Based on Bernstein's theoretical lens of the pedagogic device, the research question was explored using a case study approach to collect the perspective of practitioners and academics. The findings indicate that there are weak external boundaries of forensic accounting with knowledge claims which tend to serve social relations rather than epistemic relations. Furthermore, the horizontal structure of forensic accounting was seen as highly segmented, and this is reflected in the curricula which currently lacks coherence and cohesion.

The ***fifth chapter*** introduces the third article: ***Perceptions of the Usefulness of Various Teaching Methods in Forensic Accounting Education,*** which presents evidence from two qualitative sources to explore the pedagogies of forensic accounting and answer the third question in this thesis. This research depends on the current forensic accounting curricula, handbooks and syllabi to explore the pedagogical methods that Australian universities have used in teaching forensic accounting education. In addition, this paper investigated the perceptions of forensic accounting practitioners and academics in order to explore forensic accounting pedagogies. The theoretical framework includes experiential learning theory and the signature pedagogies theory. A case study approach yields insight into the usefulness of various teaching methods in forensic accounting based on the current educational practice of Australian universities and the perspectives of practitioners and academics. As a result, the experiential approach is advocated as a philosophy and a signature of forensic accounting pedagogies.

The ***final chapter*** discusses the findings from both the interviews results and the data collected and analysed from universities' websites. This chapter presents the conclusions and synthesis of the thesis findings, demonstrates the empirical and theoretical implications, outlines the research limitations, and provides future researchers with possibilities for extending this research.

Chapter Two: Literature Review and Theoretical Framework

2.1. Overview

The first section of this chapter presents an overview of forensic accounting and an extensive review of literature which has covered major issues in forensic accounting education, profession and industry. The second section of this chapter presents the philosophical position of the researcher and justification for the use of the theoretical lenses.

2.2. Literature review

2.2.1. Introduction

Huber and DiGabriele (2015a, 39) argued that:

> *Prior to considering the purpose of research in forensic accounting, it is important to understand what is forensic accounting and the fields, disciplines, and domains encompassed by forensic accounting.*

This section highlights critical aspects related to forensic accounting as a profession and discipline in Australia and worldwide. In detail, this section will provide empirical evidence from previous studies about the services provided by forensic accountants, the desired characteristics of forensic accountants, accreditation methods and the educational pathways that are available for forensic accountants. Furthermore, this section will shed light on the nature of the skills and knowledge required by practitioners in forensic accounting firms in the Australian context. The literature review illustrates the related prior work from the national and international forensic accounting literature relevant to curriculum design and pedagogical practice. This section concludes by providing a summary of the literature and identifying the research gap.

2.2.1.1. What is forensic accounting?

This subsection provides an overview of the history and definition of forensic accounting. There are two perspectives that are commonly used to define forensic accounting. These two definitional perspectives relate to (1) the academic perspectives that have been found in the academic literature and (2) the professional perspectives that have been found in the forensic accounting standards and ethics code of conduct mainly in Australia and USA. In addition, this subsection reviews the literature related to the domain of forensic accounting services and the required skills for effective forensic accounting engagements.

2.2.1.2. Historical overview and definition of forensic accounting

Historically, the term forensic accounting can be traced back to 1946 when Maurice Peloubet used the term in an essay entitled “Forensic Accounting – Its Place in Today’s Economy” (Botes & Saadeh 2018, 136). Some researchers argued that forensic accounting work existed

long before that and dated back to the Pharaohs era in ancient Egypt where specialists were used to protect grain and gold inventories from fraudulent activities (Wells 2000). Evidence provided by Crumbley (2001) noted an event that occurred in 1817 when a Canadian accountant investigated and provided testimony in a court case as an expert witness.

In the literature, there have been two main categories used to define forensic accounting; in-courtroom direction and broad services direction. Researchers who have taken the in-courtroom direction to define forensic accounting appear to concentrate mainly on the legalistic role of forensic accounting. This is seen in the definition provided by the U.S. based National Institute of Justice's report (2007). This definition is provided in Table 2.1 below. The second group of researchers emphasise the holistic role of forensic accounting, which is extended beyond the narrower scope of the in-courtroom focus (Botes & Saadeh 2018). This second group of researchers have taken into consideration the roles that forensic accountants play in fraud detection, business valuation and IT forensics. The broad services direction to define forensic accounting is found in the definition of the Australian Accounting Professional and Ethical Standards Board (APESB) and the definition provided by Botes and Saadeh's study (2018). These definitions are provided in Table 2.1 below.

Forensic accounting has been described as an ill-defined discipline (Huber 2012; Botes & Saadeh 2018) which has reflected negatively on the perception of forensic accounting as a profession. This has resulted in a lack of general public recognition, complexity in understanding the scope of forensic accounting and a range of intricate problems related to constructing forensic accounting education programs. Some researchers relate the variation and inconsistency of forensic accounting to the lack of academic interest in forensic accounting (Rezaee & Burton 1997; Seda & Kramer 2014). Heitger and Heitger (2008, 561) claimed that many academics lack an "understanding and appreciation" of forensic accounting. McMullen and Sanchez (2010, 31) argued that the lack of understanding and appreciation of forensic accounting had been reflected in the limited amount of research related to forensic accounting. However, academic literature, professional literature and some professional standards provide various definitions of forensic accounting. These definitions are provided in table 2.1.

Table 2.1: Forensic accounting definitions and their sources

Source	**Definition***
Bologna and Lindquist (1995)	The application of financial skills, and an investigative mentality to unresolved issues, conducted within the context of rules of evidence. As a discipline, it encompasses financial expertise, fraud knowledge and sound knowledge and understanding of business reality and the working of the legal system.
Hopwood et al. (2012)	The application of investigative and analytical skills for the purpose of resolving financial issues in a manner that meets standards required by courts of law.
Huber and DiGabriele (2014)	[…] a multidisciplinary field that encompasses both a profession and an industry, where civil or criminal economic and financial claims, whether business or personal, are contested within established political structures, recognized and accepted social parameters, and well-defined legal jurisdictions, and informed by the theories, methods, and procedures from the fields of law, auditing, accounting, finance, economics, psychology, sociology, and criminology.
Botes and Saadeh (2018)	The application of financial expertise, investigative skills and legal knowledge to undertake fraud examinations, advisory services, disputes and other reviews, the result of which could lead to a court of law appearance.
National Institute of Justice (2007)	Forensic accounting is the application of accounting principles, theories, and disciplines to facts or hypotheses at issue in a legal dispute, and encompasses every branch of accounting knowledge.
Association of Certified Fraud Examiners (2016)	The use of professional accounting skills in matters involving potential or actual civil or criminal litigation.
Accounting Professional and Ethical Standards Board (2015)	Forensic accounting services mean expert witness services, lay witness services, consulting expert services and investigation services.
American Institute of Certified Public Accountants (2019)	Services which generally involve the application of specialised knowledge and investigative skills possessed by CPAs to collect, analyse, and evaluate evidential matter, and to interpret and communicate findings in the courtroom, boardroom, or other legal or administrative venues.

*All the definitions in this table are quoted directly from the sources column in table 2.1

As has been demonstrated from this sample of definitions, not only do they differ but in some cases are contradictory, especially in relation to the inclusion of fraud. Regardless of the favoured definition, it is apparent that forensic accounting is complex and covers a wide range of services (Huber & DiGabriele 2015b; Hegazy et al. 2017; Tiwari & Debnath 2017). The next sub-section provides a review of what forensic accounting encompasses. From an Australian point of view, the accounting professional and ethical standards board (APESB) has defined forensic accounting and the sub-services that a practitioner in this field may provide. This definition appears to provide a comprehensive definition of what is involved in forensic accounting. Therefore, APESB's definition of forensic accounting services has been adopted for the purpose of this thesis.

2.2.1.3. Forensic accounting scope

Forensic accounting is about providing services that may maintain the continuance of individuals, organisation, and governments (Huber 2011b; Huber & DiGabriele 2015b; Durtschi & Rufus 2017; Mehta & Bhavani 2017; Howieson 2018). Forensic accounting services are broad; this, in turn, leads to forensic accounting constituting a multidisciplinary specialisation (Hegazy et al. 2017; Jenkins et al. 2017). Forensic accounting practitioners can work in various types of organisations including, public institutes, insurance companies, banks, police forces and government agencies (Yogi Prabowo 2013; Tiwari & Debnath 2017). There is overlap between some services that forensic accounting provide (e.g. litigation services and business valuation; fraud detection and cyber crimes detection). The majority of studies in this area have classified the services offered by a forensic accountant into four main categories. These categories are litigation services (Rezaee & Burton 1997; Van Akkeren & Tarr 2014), fraud investigation (Louwers 2015; Lindberg & Seifert 2016), computer forensic analysis (Pearson & Singleton 2008; Seow et al. 2016) and business valuation (Cheng & Crumbley 2016; DiGabriele & Lohrey 2016; Grubb 2017).

According to Huber et al. (2015), forensic accountants may act as advisors providing professional assistance to lawyers in litigation or to present evidence in a lawsuit. Litigation support services may include; dispute resolution, dispute advisory, expert witness engagements, forensic consulting services, business advisory, corporate governance, corporate misconduct, and contract assessment (Warshavsky 2013; Quirin & O'Bryan 2015). Forensic accountants may also be engaged in matrimonial litigation and provide expert testimony in the

family court to evaluate family property, provide a fiscal profile of the family's income, ensure equitable distribution of assets, and prepare lifestyle analysis. In some circumstances, a shadow expert is needed. A shadow expert plays a role in interpreting the facts in another way, analysing the original expert's report for inaccuracy, and discussing the reasonableness of the valuation methodology used (DiGabriele 2008b).

Forensic accounting encompasses comprehensive tools and technique for the investigative process. The forensic accountants are deemed to be qualified with the capacity to help decrease the number of fraud occurrences (Carpenter et al. 2011). A student who aims to be a forensic accountant needs to be trained to develop investigative abilities, which exceed the traditional auditor or accountant roles and expectations (Apostolou & Crumbley 2008). A forensic accountant plays a significant role in the process of detecting, preventing, and prosecuting individuals who are involved in fraudulent activities, such as, financial misstatement, money laundering, identity theft, cybercrime, and government fund theft (Thornhill 1995; Singleton et al. 2006; Sanchez 2012; Lindberg & Seifert 2016; Lehmann & Heagy 2017).

Business valuations are one of the main areas of speciality which practising forensic accountants are involved in (DiGabriele 2012). Crumbley et al. (2004) endorsed that forensic accountants are experts in the valuation of lost profits. Smith (2012) asserted that forensic accountants could provide business valuations services in some circumstances, including cases such as personal injury, risk analysis, bankruptcy, family law, estate and gift, matrimonial issue, stock-based compensation, and the fair value of financial reporting. Many researchers advocate the role of forensic accountants in this area and recommend that forensic accounting curricula should embrace the application of forensic accounting in business valuation (Rezaee et al. 1992; Rezaee & Burton 1997; Rezaee et al. 2004; Brennan 2005; Rasmussen & Leauanae 2005; Curtis 2008a, 2008b; Heitger & Heitger 2008).

The use of new technologies to conduct fraud is growing (Cook & Clements 2009). Forensic accountants are expected to deal with the computerised environment and engage with a variety of work such as information technology, data mining, and computer forensics (Smith 2005). Pearson and Singleton (2008) identified various cybercrimes where forensic accountants can take a significant role such as credit card fraud, ID theft, online narcotic sales, telecommunications fraud, online/email extortion, online gambling, theft of computer privacy, and intellectual property rights theft. Forensic accountants have been acknowledged for their

effectiveness in their use of computerised tools in detecting fraud (Cook & Clements 2009). In addition, many researchers have recommended forensic accounting education to embrace the technological aspects of forensic accountants work (Pearson & Singleton 2008; Murthy 2010; Marshall & Cali 2015).

Forensic accounting research in Australia is limited (Chen & Van Akkeren 2012; Van Akkeren et al. 2013; Van Akkeren & Tarr 2014; Van Akkeren & Buckby 2015; Tarr et al. 2016). Van Akkeren et al. (2013) stated that Australian forensic accountants and forensic accounting educators differ broadly on the best way for the forensic accounting profession to be developed within Australian. However, in terms of the provided services, Australian forensic accounting firms respond in a very active manner to the complexity of forensic accounting work. They provide a variety of services which cover the vast majority of the clients' needs (Chen & Van Akkeren 2012). Many forensic accounting firms focus on fraud investigations services, disputes solving services, family law services, expert testimony services, deliver an opinion and estimate of value services, and loss and damage claims services.

2.2.1.4. Desired skills of forensic accountants

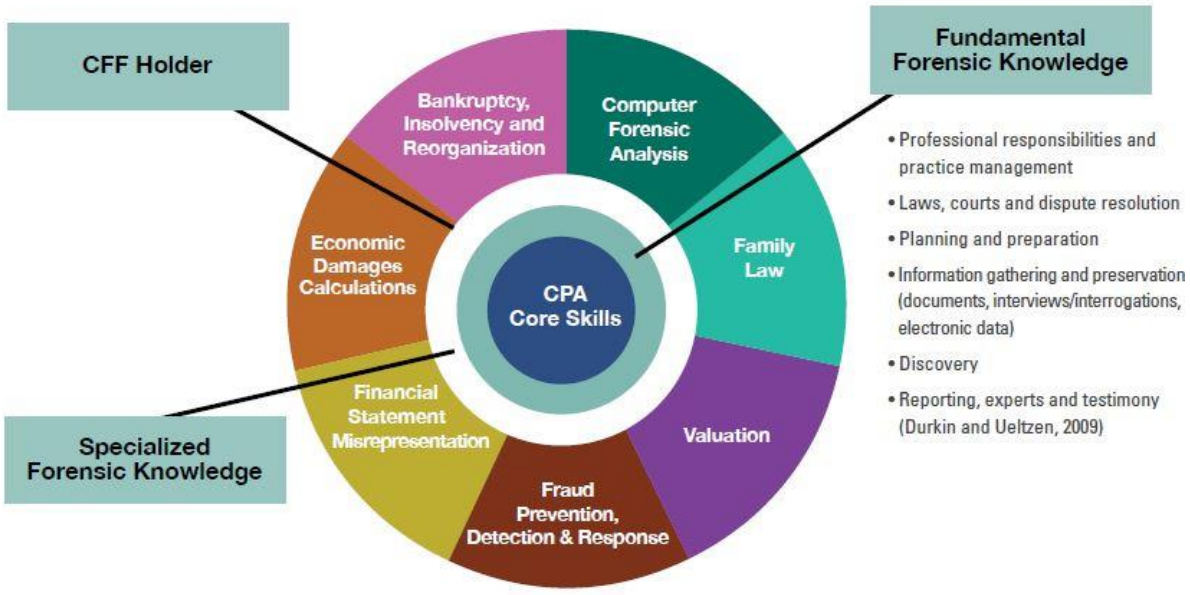
Several researchers assert that forensic accounting students must develop more than technical skills to succeed in their future work; these skills include investigative, adversarial, analytical and technological skills (DiGabriele 2008a; Young 2008; Davis et al. 2010; Kern & Weber 2016). Since the emergence of forensic accounting the necessary skills set have been widely debated. Many studies have explored skills importance from the academics and practitioners point of view (DiGabriele 2008a; Davis et al. 2010; McMullen & Sanchez 2010; Yogi Prabowo 2013). The forensic accounting discipline combines knowledge and skills from accounting, auditing, tax, law, criminology, psychology, and sociology (Rezaee et al. 1992). Knowledge, skills, and attributes differ depending on the type of services that the forensic accountants offer (Heitger & Heitger 2008).

Some studies have addressed the nature of the knowledge, skills, and attributes that forensic accountants have to possess. DiGabriele (2008a) investigated whether there are differences in views about the relevant skills of forensic accountants between forensic accounting practitioners, accounting academics and users of forensic accounting services. DiGabriele's study (2008b) provided additional guidance to assist with the improvement of forensic

accounting curriculum by identifying appropriate knowledge, skills and attributes to accompany forensic accounting curriculum. The findings of DiGabriele's study (2008b) indicated that the participants agree that the ability to think critically, to use investigative flexibility, to have analytical proficiency, to solve unstructured problems are important skills for forensic accountants.

Davis et al. (2010) investigated the perception of forensic accountants, attorneys and forensic accounting academics regarding the optimal characteristics that a forensic accountant should possess. These included communication skills, the capacity to simplify complex financial transactions, the ability to offer opinions in a legal context, the ability to pay attention to the analytical details and see the big picture. Davis et al. (2010) highlight the idea that there are classifications for traits and characteristics, which encompass both core and enhanced skills. The following figure is proposed by Davis et al. (2010) and highlights the main forensic accounting areas of specialisations.

Figure 2.1: Forensic accounting knowledge. Source: Davis et al. (2010, 3)

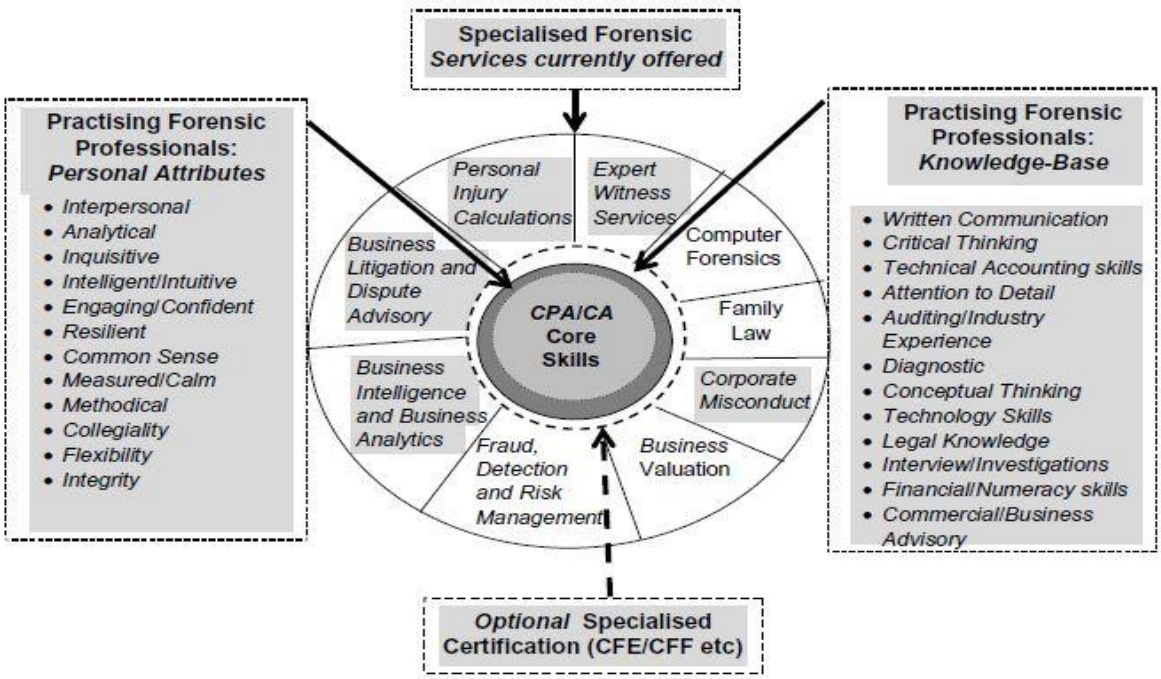


In the Australian context, the set of skills required for accounting students has received considerable attention in the literature (e.g., Mathews et al. 1990; Birkett 1993; De Lange et al. 2006; Kavanagh & Drennan 2008; Jackling & De Lange 2009). The prior research reinforces the necessity of having graduates with teamwork and good interpersonal skills, communication

and presentation, problem-solving, self-management, technological competence, initiative and enterprise and planning and organising skills. In contrast, few studies identify the required skills for effective forensic accounting engagements in the Australian context (Chen & Van Akkeren 2012; Van Akkeren et al. 2013; Van Akkeren & Tarr 2014; HuberAndon, et al. 2015; Van Akkeren & Buckby 2015; Tarr et al. 2016). The core skills that are mentioned in figure 2.1 are referred to the required skills by AICPA. In the Australian context, the set of characteristics does not differ from what forensic accountants worldwide are encouraged to possess. Van Akkeren et al. (2013) argued that Australian forensic accounting firms expect staff to have excellent work-based skills, such as technology, analytical, oral and written communication skills (see figure: 2.2). The core skills that are mentioned in the figure 2.2 are referred to the required skills by CPA Australia and CAANZ.

While there is some overlap in illustrated details between Figure 2.1 and 2.2, the separating of the information into two figures helps to illustrate the content and provides an opportunity for the information to be more detailed and more readable.

Figure 2.2: Australian forensic accounting traits and characteristics. Source: Van Akkeren et al. (2013, 209).



Several studies have addressed the role of education in preparing students for forensic accounting work. Brickner et al. (2010) argue for the importance of applied learning programs to improve adversarial, investigative and technological skills in the context of forensic accounting education. These skills could be useful in organising evidence, designing an investigation process, using interviews technique and applying communication skills. Lee et al. (2015) examine the effect of forensic accounting education on students' creativity. They have shown that students who engage in a forensic accounting course show higher levels of resourcefulness compared to students who do not engage in a forensic accounting course. In a similar study, Carpenter et al. (2011) concluded that the forensic accounting course promoted the students' level of scepticism. Their longitudinal experiment suggests that teaching forensic accounting course gives students higher performance in fraud risk assessments. These views support McMullen and Sanchez (2010) suggestion of integrating scepticism, surveillance tactics, puzzle skills, interrogative and investigative skills within the classroom.

Kern and Weber (2016) demonstrated that implementing forensic accounting education could benefit students by gaining a set of knowledge and skills which may let them effectively administer interviews, improve their analytical, critical thinking, and collaborative skills, and develop a greater appreciation for and understanding of internal control systems. The multidisciplinary nature of the forensic accounting specialisation has led to expectations that forensic accounting graduates show additional non-accounting capabilities and skills such as technological skills and digital analysis skills (Bierstaker et al. 2006). Pearson and Singleton (2008) support these views as they argue that students need a general understanding of tools and techniques used by IT forensic specialist for retrieving digital evidence and understanding forensic computer work.

In this respect, forensic accounting firms have to improve their team qualification and competencies to provide services in this domain. It is a challenge to engage a specialist who is able to work in all domains of this complex area of practice (Davis et al. 2010; Hegazy et al. 2017; Tiwari & Debnath 2017). Appropriate educational qualifications could be helpful to potential forensic accountant practitioners in understanding the legal ramifications and the environment within which forensic accounting operates. Professional accreditation is also helpful to practitioners who wish to specialise in a specific services category. The next section provides a review of the literature on the accreditations of forensic accounting.

2.2.2. Profession overview: international versus national

This subsection provides an overview of the forensic accounting profession in the national and international context and identifies the available accreditation and certification channels for forensic accountants.

2.2.2.1. Forensic accounting profession in Canada, Ireland, UK, and the USA

In forensic accounting literature, there are major variations in the professional regulations across countries. Hegazy et al. (2017) found noticeable differences between what is expected of forensic accountants in the UK in comparison with those in the US. According to Hegazy et al. (2017), UK forensic accountants are less engaged with expert witness roles and asset valuation than in the US. Also, they undertake less matrimonial work than in the US. In the UK context no formal rules control the requirement of entry into the specialisation of forensic accounting (not even a qualification that requires exam-based membership of a professional accounting association). In addition, there is a lack of empirical evidence in the literature that identifies the regulatory and monitoring arrangements for forensic accounting firms.

According to Brennan (2014), the specialisation of forensic accounting in Ireland is considerably less developed than the US and probably comparable to countries such as the UK, Canada, and Australia. In Ireland, forensic accountants provide a broad range of forensic accounting services. In Ireland, all big four firms have a forensic accounting team and provide services that may include fraud and financial misconduct investigations, forensic technology solutions, e-discovery services, recovery of stolen assets, anti-money laundering services, corporate/business intelligence, and personal injury claims. Notwithstanding, the same problem of controlling the entry to the profession arises within the Ireland context (Brennan 2005). There are as yet no professional practice guidelines for forensic accounting, while there are many accountants who claim forensic accounting expertise without any requirements for formal qualifications and professional rules or codes of ethics.

In the Canadian context, forensic accounting has been considered as a specialisation within the accounting profession. It has been regulated, in terms of education, qualifications, and control of entry to the profession. It is now under the supervision of CPA at the federal level. Furthermore, certificates are issued for the chartered accountants who work in each area of forensic accounting services separately after a rigorous examination process (Gosselin 2014).

Canadian forensic accountants engaged with various tasks including litigation services, damages and compensation for losses services, fraud investigation services, insolvency and restructuring services and different IT services.

The forensic accounting profession is well established in the U.S. (Huber 2012, 2013c, 2013a, 2014b). The big four and many other accounting firms in the U.S. context have specialised forensic accounting teams. The increase in forensic accounting firms' profit in the U.S. is greater than the overall U.S. national GDP increase (Huber 2014b). Huber (2012) argued that forensic accounting in the U.S. is not a niche market and needs time to evolve as a profession. According to Huber (2013c), there are many problems which affect the accreditation process of forensic accounting practitioners and the industry in the U.S. context. The associations which provide accreditation channels for new forensic accountants have failed to comply with the U.S. legal system. In addition, they have failed to disclose the qualifications of their directors and officers (Huber 2013c). Huber (2013c) asserted that to gain public recognition, the associations should publish financial statements, adopt a code of ethics or standard of practice and prove their legitimacy of issuing certifications to forensic accountants.

Huber (2013c) suggested three alternatives which are recommended for evaluating forensic accounting profession in the U.S. context. These alternatives include, first, adopting voluntary regulation by the corporations. Second, establishing an independent agency for forensic accounting certifications. Third, introducing government regulations for forensic accounting. Huber (2013c) argues that voluntary regulation and an accrediting agency is not an effective solution because the directors and officers of the forensic accounting corporation do not disclose their qualifications. In addition, voluntary regulation or accrediting agency will not satisfy the public expectations, bearing in mind that they are sceptical about the effectiveness of voluntary regulation and an accrediting agency. Huber (2013c) mentioned two obstacles in the case of an accrediting agency, which are the cost of creating and maintaining the accrediting body and the need for cooperation by the associations. Therefore, Huber (2013c) supports the intervention of the government as a solution to the forensic accounting regulation problem due to the argument of public interest, ability to enforce a code of ethics, and ability to enforce a standard of practice.

2.2.2.2. Accreditations and certifications

Recent articles have revealed significant obstacles within the forensic accounting profession and the forensic accounting certification industry that unfavourably influence the credibility of the forensic accounting profession and the industry (Brennan 2005; Huber 2011a, 2011b, 2012, 2013a, 2013c, 2013b; Van Akkeren et al. 2013; Brennan 2014; Huber 2014b, 2014a; McIntyre et al. 2014; Huber & Charrier 2015; Tarr et al. 2016; Hegazy et al. 2017). Though there are some problems attached to the regulation of forensic accounting worldwide, there are many organisations which provide various kind of certifications.

Ramaswamy (2007) proposed that any forensic accountant who is looking to be certified should hold an accredited certification. There are many associations that issue certifications in forensic accounting (Huber 2014a). For instance, the Association of Certified Fraud Examiner provides the certified fraud examiner (CFE), which is one of the most popular accreditations for forensic accounting. Blalock (2012) suggested more accreditation channels such as Certified Forensic Accountant (Cr.FA), The Certified Insolvency and Reorganization Accountant (CIRA), Certified Fraud Specialist (CFF) certification. In the US context, literature in the area of forensic accounting is centralised to the recognition of forensic accounting qualifications. Huber (2013a) provided a summary encompassing other forensic accounting certifications offered by different associations. Huber (2013a) show a need for improvements for the forensic certifications, which might include the establishment of an organisation to control and authorise forensic accounting corporations and their certifications, or for governmental laws to impose standards for forensic accounting corporations and the certifications.

2.2.2.3. Forensic accounting profession in Australia: an overview

In Australia, there is a promising environment for forensic accounting on both the practical and educational sides (Seda & Kramer 2008; Chen & Van Akkeren 2012; Van Akkeren et al. 2013; Van Akkeren & Tarr 2014; HuberAndon, et al. 2015; Van Akkeren & Buckby 2015; Tarr et al. 2016). Forensic accountants are working in a diverse range of accounting firms, from big four firms to small accounting firms (Van Akkeren & Buckby 2015; Tarr et al. 2016). Currently, universities in Australia provide a diverse range of courses to teach forensic accounting programs (Van Akkeren et al. 2013). Some universities provide a separate qualification in forensic accounting (diploma or masters), while others only teach one or two units of forensic

accounting within their accounting programs. In the Australian context no formal rules control entry to the profession of forensic accounting (Chen & Van Akkeren 2012). Again, there is a lack of empirical evidence in the literature that identifies the bodies responsible for regulating and monitoring the forensic accounting industry in Australia.

The accounting profession's three leading associations in Australia; CPAAustralia , and the Chartered Accountants of Australia and New Zealand (CAANZ), all pay some attention to forensic accounting. Together these institutions represent the vast majority of Australian accountants (Van Akkeren & Tarr 2014). CPA Australia manages the Forensic Accounting and Investigation Discussion Group (FAIDG), while CAANZ has the Business Valuation Special Interest Group (BVSIG) and the Forensic Accounting Special Interest Groups (FASIG) which has been replaced by the National Forensic Accounting Committee.

CPA Australia issues a public practising certificate issues for members who pass this practising qualification process. The broadness of the certificate applies to these members who earn, or plan to earn, more than $45,000 in gross fees each calendar year from the provision of public accounting services. CA ANZ issue a Certificate of Public Practice (CPP) to permit its members to provide services to the public as a Chartered Accountant. Although the two major Australian accoutning associations, there is no specific forensic accounting practicing certificate to control for the specialised practice of forensic accounting in Australia or New Zealand. Therefore, forensic accounting in the Australian context needs more effort in terms of regulation and certification.

2.2.2.4. APES 215 forensic accounting services:

The accounting professional and ethical standards board (APESB) has revised professional standard APES 215 forensic accounting services which is effective for engagements since the 1st April 2016. APES 215 sets the standards for its members in the provision of the quality and ethical forensic accounting services. The "member" as defined by the standard means the practitioner of forensic accounting services who is accredited by a professional body and apply the APES 215 to his services. The standard defines the profession of forensic accounting as well as regulates the fundamental responsibilities of forensic accountants. Additionally, APES 215 defines a member's professional and ethical obligations. The standard applies to all

members in Australia and members outside Australia are allowed to adhere to APES 215 if there is no contradiction to local laws or regulations.

The standard provides requirements for the independence of forensic accountants and the confidentiality of clients' information. The standard addresses many other issues, for instance, professional engagement matters, expert witness services, the report of an expert witness, false or misleading information and changes in opinion, quality control, professional fees, and forensic accounting service types. According to APES 215, forensic accounting practitioners shall comply with specific sections of the APES 110 code of ethics for professional accountants, which organises and maintains fundamental responsibilities such as public interest, professional independence, professional competence, and due care and confidentiality.

2.2.3. Curricula issues

Prior international studies provide an exploration of universities' forensic accounting programs of study or stand-alone courses. Young (2008) discussed the impact of forensic accounting curriculum and the challenges to creating such curriculums based on a Florida Atlantic University experiment. Kresse (2008) discussed the Saint Xavier University graduate program in financial fraud examination and management. West Virginia University (WVU) administrated a graduate program in forensic accounting, which was supported by the National Institute of Justice (NIJ) and developed by experts in the field (Fleming et al. 2008; Kranacher et al. 2008). Kranacher et al. (2008) illustrated the prerequisite knowledge and material/courses that student should be familiar with. Additionally, Kranacher et al. offered exploration and field-testing of the model curriculum at West Virginia University. These stand-alone courses and programs of study have been located in several levels such as the master program (Young 2008), or graduate certificate programs (Fleming et al. 2008; Kranacher et al. 2008; Kresse 2008).

Curtis (2008a) discussed the design and delivery of an interdisciplinary program in fraud and forensic accounting offered by Utica College. O'Bryan (2009) described the development of an interdisciplinary, 21-hour minor in fraud examination at Pittsburg State University. Brickner et al. (2010) described an applied classroom learning exercise at Adrian College; the course includes solving hypothetical tax fraud crimes, the students benefit from the program was measured by using questionnaires before and after the students had done the course. Kern and

Weber (2016) summarised components, structure, benefits, and cost of a unique and innovative experiential/service learning course in forensic accounting, under the supervision of Certified Fraud Examiners. The results of Kern and Weber's study (2016) provided guidelines on how to design the class, together with suggesting solutions for unique challenges involved in adopting these kinds of classes.

According to Fradella et al. (2007), forensic science courses should maintain a balance between theory and application. In forensic accounting courses, and within the curriculum, there are several obstacles that faculty must address. These issues are inherent to the interdisciplinary nature of forensic accounting; the instructional material available for forensic accounting studies (Rezaee & Burton 1997); the inconsistency of forensic accounting curricula between educational institutes (Seda & Kramer 2014, 2015); the lack of agreement between the profession stakeholders over the components of forensic accounting (Smith & Crumbley 2009) and the availability and offering modes of forensic accounting courses.

It has been argued that forensic accounting education will mainly focus on fraud, litigation, business valuation, and IT forensics (Huber & DiGabriele 2015b; Souza 2017). However, researchers such as Rezaee et al. (2016) have suggested a typical coverage for the forensic accounting topics, which includes 21 topics. Among these topics, the Rezaee et al. (2016) study showed a concentration on fraud topics. Other researchers provided different arguments. For example, Souza (2017) recommended adopting a new approach to teaching forensic accounting that places greater emphasis on valuation, damages, and litigation services. Pearson and Singleton (2008) suggested more concentration on the application of forensic accounting in the digital and technological environment. Furthermore, as forensic accounting is an interdisciplinary specialisation, a practitioner in this field should be aware of the application of theories and principles from a wide range of fields including psychology, criminology, ethics, and sociology (Kresse 2008).

Hylton Meyer et al. (2010) reviewed the websites of 171 universities to quantify those who teach forensic accounting. Hylton Meyer et al. study (2010) included 166 universities in the United States, one in Singapore, one in Australia and three in China including one in Hong Kong. The results demonstrated that less than three 3% of the reviewed universities have separate programs in forensic accounting, Seda and Kramer (2009) showed that there appeared to be no consensus on how to uniformly integrate forensic accounting into the accounting

curriculum. Seda and Kramer (2015) reviewed the websites of U.S. higher education institutes to determine the degree to which the NIJ-funded model curriculum had been applied by those institutions providing forensic accounting education. This study highlighted that 74.5% of the undergraduate forensic accounting education programs showed little or no conformity with the NIJ-funded model curriculum. Graduate programs showed greater conformity with 51% showing at least some compliance. Overall, prior studies have shown a high level of variation and uncertainty regarding what should be included in a forensic accounting course or how these different segments of knowledge could be tailored into a program of study.

Another curricular issue facing the education of forensic accounting is inherent to the instructional material (Young 2008). Rezaee and Burton (1997, 485) reported the "lack of instructional materials including textbooks" as one of the significant challenges that are facing forensic accounting education. This conclusion was based on the views of academics and certified fraud examiner (CFE) practitioners. In a similar study, Seda and Kramer (2009) supported the need for specialised textbooks in forensic accounting. There are few recommended textbooks for students' use (Rezaee & Burton 1997; Heitger & Heitger 2008; Kranacher et al. 2008; Seda & Kramer 2015; Matson 2016).

2.2.4. Pedagogical issues

According to Saunders and Machell (2000), higher education should aim to familiarise students with their future career. Therefore, it is imperative for courses to be explicitly designed to fulfil program objectives and for the program objectives to be aligned with the needs of the profession (Biggs 1996). Students should be taught in a way that equips them with the competencies required by the employers (Carnes & Gierlasinski 2001; DiGabriele 2007; Davis et al. 2010; Tiwari & Debnath 2017). A number of researchers have examined the use of different pedagogies to teach forensic accounting (DiGabriele 2010; Carpenter et al. 2011; Kleinman & Anandarajan 2011; DiGabriele 2012; Matson 2016; Lehmann & Heagy 2017; Sledgianowski et al. 2017). This subsection outlines prior forensic accounting studies in relation to the pedagogical approaches used and the suitability of certain pedagogies for forensic accounting teaching.

In accounting education, there are many approaches to learning and teaching. Each approach tends to serve an intrinsic aim inherent to the accounting profession (Helliar 2013) or suitable

for a certain threshold concept (Shauki & Benzie 2017; Miihkinen & Virtanen 2018). Researchers have suggested accounting educators should consider teaching approaches such as an experiential learning approach (Bremser & White 2000; Marriott et al. 2015), problem-solving (Wolk et al. 1997; Johnstone & Biggs 1998), internships (Beard 1998; Edward Beck & Halim 2008), active learning approach (Riley & Ward 2015; Levant et al. 2016), and the cooperative learning approach (Cottell Jr & Millis 1992; Caldwell et al. 1996).

The extant literature has focused on investigating forensic accounting teaching tools rather than pedagogical approaches. These teaching tools include case studies (DiGabriele 2010; Laufer & Betzer 2010; DiGabriele & Lohrey 2016; Jepperson 2016; Mehta & Bhavani 2017), guest speakers (Laufer & Betzer 2010), group discussions (Lehmann 2015), report writing (Brickner et al. 2010; Kern & Weber 2016), games (Kleinman & Anandarajan 2011), role-playing (Jalilvand & Kostolansky 2016), videos (Gates et al. 2011; Holtzblatt & Tschakert 2011). These kinds of teaching tools have been proposed by previous researchers as the most suitable methods to simulate investigative methodologies (Mena 2003; Brooks & Labelle 2006a; Houck et al. 2006; Crumbley et al. 2007; Jenkins et al. 2017; Tiwari & Debnath 2017), adversarial (Brennan 2005; Rasmussen & Leauanae 2005; Marychurch 2006; Blalock 2012; Durney & Fitzpatrick 2016; Durtschi & Rufus 2017) and the technological nature of the forensic accounting work (Pearson & Singleton 2008; Sledgianowski et al. 2017; Alli et al. 2018; Gepp et al. 2018).

2.2.5. Literature summary and gap

Rebele and Pierre (2015) argued that the gap between research and application is the main issue with accounting research. Huber and DiGabriele (2015a) conducted a systematic review of the most topics and methods used in forensic accounting research. The findings showed that researchers are applying similar methods across similar forensic accounting topics. Consequently, the lack of diversity in forensic accounting research methods and topics may compromise the overall contribution of forensic accounting research.

The existing forensic accounting literature highlights the skills, knowledge, and attributes that may be considered essential for a forensic accountant to have in order to accomplish his or her work (Carnes & Gierlasinski 2001; Palmer et al. 2004; DiGabriele 2007, 2008a; Kresse 2008; Young 2008; Davis et al. 2010; McMullen & Sanchez 2010; Huber & DiGabriele 2014; Salleh

& Abaziz 2014; Peshori 2015; Rezaee et al. 2016; Tiwari & Debnath 2017). Consequently, the prior research recommended that universities need to pay attention to forensic accounting education (Rezaee et al. 1992; DiGabriele 2008a; Kranacher et al. 2008; Akyel 2012; Rezaee et al. 2014; Seda & Kramer 2014; Van Akkeren & Tarr 2014; Lee et al. 2015; Seda & Kramer 2015; Matson 2016; Rezaee et al. 2016; Wang et al. 2016).

However, little research has explored the curricula and pedagogies forensic accounting. This thesis extends the initiatives that have been done by prior researchers to improve forensic accounting education. This thesis aims to develops an understanding of the educational practice (curricula and pedagogies) in the forensic accounting discipline within the Australian universities. In terms of the curricula, this research explores the process in which the knowledge of forensic accounting is transformed into the teaching curriculum and examines the factors that influence this process. In term of the pedagogies, this research explores not only the features of forensic accounting pedagogies but also which pedagogies may enhance student understanding of forensic accounting knowledge.

2.3. Theoretical framework

2.3.1. Introduction

A number of theories have been employed to explain and describe educational practices (including curricula and pedagogy). As this thesis explores the forensic accounting curricula and pedagogies, three theories have been used to interpret the data and answer the research questions. These theories are the pedagogic device (Bernstein 1990, 1996, 1999, 2000, 2003), experiential learning (Kolb 1984; Kolb & Kolb 2006; Kolb 2015) and signature pedagogies (Shulman 2005a, 2005c, 2005b, 2008). An overview of the theories is provided in the subsections following the justification of the research philosophy, which includes an illustration of the researcher's ontological, epistemological and methodological assumptions.

2.3.2. Research philosophy

Every researcher aims to contribute to the knowledge in a particular area using a scientific and systematic approach based on logical arguments (Creswell 2013). In the context of social science, different studies reflect different philosophical assumptions about the nature of social science. The research philosophy informs the process of knowledge development (Guba & Lincoln 1985; Guba & Lincoln 1994; Mkansi 2012). Researchers ground their approach to research on their knowledge about research philosophy (Denzin & Lincoln 2005). Thus, researchers choose the most suitable methodology from a range of possible research methodologies based on their philosophical assumptions. Therefore the research philosophy guides researchers to be creative and investigative in their research to create valid results at the end of the research process (Johnson & Duberley 2000).

Based on the researchers' ontological and epistemological positions, a researcher who holds an objectivist approach and intends to provide generalisations will take a nomothetic\scientific approach to research, which leads to quantitative methods of research (Gaffikin 2008). In other cases, researchers whose epistemological and ontological assumptions reflect a subjective approach (idiographic/naturalistic research) will depend on their subjective interpretation to explore the research phenomenon in conjunction to their cultural and historical position. In this

kind of research, the investigation provides first-hand knowledge (Guba & Lincoln 1985; Gaffikin 2008).

According to Creswell (2013), the philosophical worldviews and stances may not be explicitly referred to in research, but they shape the research process and even if not explicitly identified they are informative. The philosophical worldviews help to justify why a researcher chooses a qualitative, quantitative, or mixed method approach as their research method. Creswell (2013, 35) defined worldviews as "*a general philosophical orientation about the world and the nature of research that a researcher brings to a study*". These worldviews include post-positivism, constructivism, transformative and pragmatism. Each worldview is described briefly next based on Creswell's (2013) definitions.

The ***Post-positivist Worldview*** assumes the suitability of an objective examination of a theory or conceptual models to examine the behaviour or the nature of the reality (Guba & Lincoln 1994). This worldview advocates the using of quantitative research rather than qualitative research and represents the traditional form of research (Creswell 2013). Post-positivists carry out a deterministic philosophy; distinguish the causes and effects and estimate the outcomes. For example, by using experimental methods (Phillips & Burbules 2000) and survey methods (Creswell 2002). The post-positivist lens provides a way to develop knowledge about the objective reality based on numeric measures of observations (Guba & Lincoln 1985; Mkansi 2012; Creswell 2013). This knowledge is governed by laws or theories that, where these laws or theories have been rigorously and scientifically tested and refined so that we can understand the world (Whetten 1989). Therefore, when using post-positivists scientific methods, researchers start with the theory, then collect the data that may or may not prove or disprove the theory. Based on the outcomes of the research, they need to make changes and conduct additional examinations (Creswell 2013).

Another worldview is the ***Constructivist Worldview***; this worldview is sometimes called social constructivism, interpretive or naturalistic inquiry (Guba & Lincoln 1985). Constructivism assumes the suitability of generating an understanding based on a subjective and varied meaning toward specific objects or things; therefore, researchers explore multiple views. This worldview advocates the use of qualitative research than quantitative research (Morgan & Smircich 1980; Perry et al. 1997). Constructivists rely on the participants' views to construct an understanding of the phenomenon or situation being studied (Creswell 2013; Silverman

2015). The researchers seek participants' opinion by asking broad and general questions. Constructivist researchers seek to use open-ended questions to gain a better understanding of people specific contexts in which people live and work (Pratt 2009; Qu & Dumay 2011; Glesne 2015). Constructivist researchers aim to interpret the meanings of the world as seen by others. In contrast to the post-positivism, the use of theory is assumed to be through an inductive approach -guided by the data- or the theory is developed as an outcome of the research (Morgan & Smircich 1980; Creswell 2013).

Transformative Worldview is a new philosophical assumption. The researchers who hold this assumption believe that the laws and theories that the post-positivist worldview imposed are not working well to serve marginalised individuals in our society (Mertens 2014). They also believe that constructivists do not advocate to help marginalised peoples (Creswell 2013). Transformative researchers emphasise the integration of research with the political change agenda to confront social oppression, where the research outcomes aim to find a way not to marginalise the participants. With these researchers, the participants have a voice and may participate in the process of data collection, analysis and research outcomes (Neuman 2009).

The ***Pragmatic Worldview*** is the last philosophical assumption in this discussion. Pragmatists emphasise the need for flexibility to adapt what works as a solution to the problem (Creswell 2002; Creswell & Clark 2007; Saunders et al. 2009; Creswell 2013). Pragmatists start by understanding the nature of the problem that they want to investigate and then use all approaches available to research the problem (Creswell & Clark 2007; Creswell 2013; Mertens 2014). The pragmatist stands as a philosophical worldview to the mixed methods research (Johnson et al. 2007). The researchers who adopt the mixed methods methodology tend to have a convergence between the two extreme points by choosing quantitative or qualitative (Johnson & Onwuegbuzie 2004; Denscombe 2008).

Forensic accounting education differs amongst Australian universities, and there is no consistency of approaches to developing the forensic accounting curricula. Australian universities have autonomy over the content and the offering mode (Freeman 2010; Freeman & Hancock 2011; Hancock et al. 2015). Therefore, this thesis adopts a constructivist worldview to explore different aspects that influence forensic accounting knowledge transformation into curricula, through examining pedagogies in the Australian context and understanding the varied individualistic beliefs that surround forensic accounting education.

2.3.3. Research Paradigm

A paradigm is a framework containing the broadly conceived understandings about a phenomenon (Guba & Lincoln 1981; Guba & Lincoln 1985; Hammersley 2002; Johnson & Onwuegbuzie 2004). A research paradigm provides directions for researchers about how they should perform their scientific inquiry (Denzin & Lincoln 1994). A paradigm is a set of assumptions or beliefs stated by a group of scientists exploring and examining the world (Denzin 2008). Paradigms consist of the three elements of ontology, epistemology and methodology (Healy & Perry 2000). Each of these three elements is discussed in the following subsections.

2.3.3.1. Ontological assumption

It is the fundamental assumptions about what exists, which are formed on the primary aspects of reality (Parkhe 1993). The formation and status of reality, and what can be recognised about reality, is referred to as ontology (Morgan & Smircich 1980; Guba & Lincoln 1985; Dillard 1991; Guba & Lincoln 1994; Mkansi 2012). Different ontological assumptions have motivated researchers to develop an understand about how to phrase the research question in different ways. This leads them to choose different methodologies and undertake research in diverse directions. In this thesis, the researcher has phrased the research questions to focus on analysing and understanding the process of transforming forensic accounting knowledge into curricula via pedagogies. In addition, this research has focused on the exploring the landscape of forensic accounting education as it is currently constructed within the Australian universities. Therefore, the core ontological assumptions for this thesis has taken a subjectivist approach to social science and has been described as "reality as a social construction" (Morgan & Smircich 1980, 497).

2.3.3.2. Epistemological assumption

Chua (1986, 603) stated that:

> *"Knowledge is produced by people, for people, and is about people and their social and physical environment. Accounting is no different. Like other empirically-based discourses, it seeks to mediate the relationship between people, their needs, and their environment."*

Epistemology relates to the meaning of knowledge, how it can be perceived by individuals, as well as how the knowledge applies to any given field (Guba & Lincoln 1985). Epistemology illustrates how a researcher can acquire knowledge in a field of study (Parkhe 1993; Johnson & Duberley 2000). Dillard (1991, 10) explained epistemology as the "means or process of knowing". A researcher's epistemological position is essential to formulate the researcher's decision about what counts as accepted truth (Guba & Lincoln 1985; Dillard 1991; Guba & Lincoln 1994). For the purpose of this study, the researcher believes that knowledge is developed within the human experience and interaction. Furthermore, the researcher assumes that knowledge is dependent on the environment in which individuals interact.

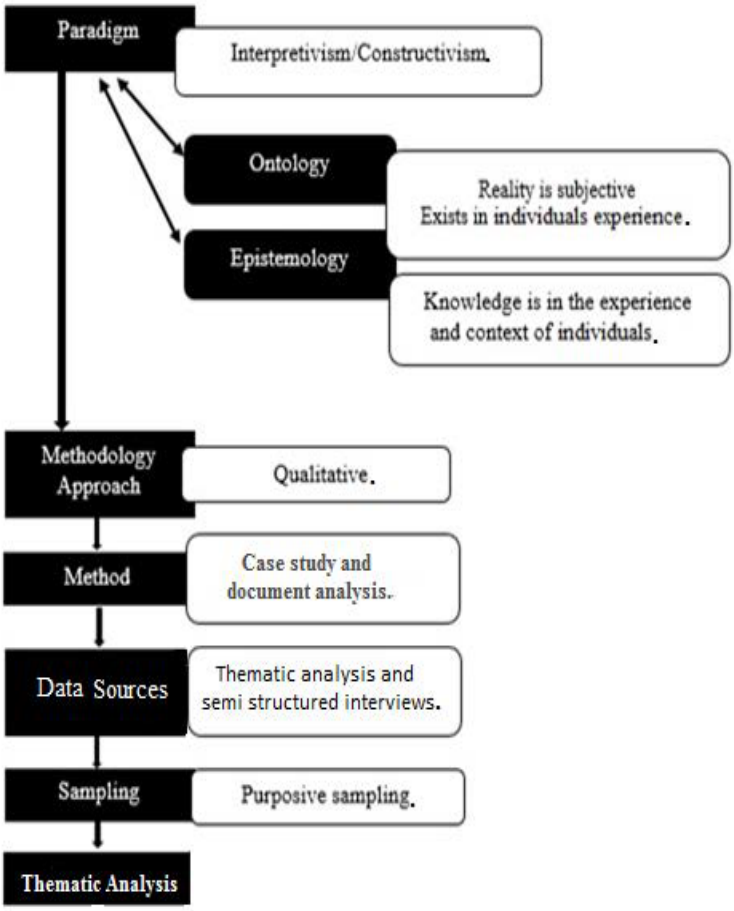
This study seeks participants' opinion and beliefs toward forensic accounting education. Therefore, constructivism worldview (Morgan & Smircich 1980; Guba & Lincoln 1981; Guba & Lincoln 1985; Chua 1986; Dillard 1991; Guba & Lincoln 1994; Mkansi 2012; Creswell 2013) serves as a philosophical stance for this thesis. Identification of the researcher's ontological and epistemological position and the research worldview has been essential in order to develop and explain the methodological position of the researcher as discussed in the next sub-section (Chua 1986; Parkhe 1993; Gaffikin 2008; Creswell 2013).

2.3.3.3. Methodological assumption

The methodology can be described as a systematic and theoretical evaluation of the methods used in a research field (Locke et al. 2009; Creswell 2013; Silverman 2015). The methodology is a process leading to findings and results based on what the researcher finds throughout their inquiry (Guba & Lincoln 1994; Perry et al. 1997). There are three types of methods: qualitative, quantitative, and mixed methods (Sekaran 2006; Creswell & Clark 2007; Johnson et al. 2007; Creswell 2013). This study follows the constructivism approach and uses a qualitative research design. This research design enabled a small sample to be used to generate a concise explanation and exploration of the problems, which, of itself, may be large and broad in nature (Silverman 2015). Also this qualitative design methodwas used to account for rich and non-numerical data to determine common patterns and themes (Schilling 2006). The qualitative forms of inquiry adopted for this study involved data collection through interviews, using open-ended questions, emerging approaches, text and/or image data and data analysis through classifying data into themes that delivered non-numerical data (Silverman 2015).

This research can be viewed as an exploratory inquiry as its primary purpose is to explore different aspects of forensic accounting education in Australian universities through qualitative methods that generate understanding of the experience of forensic accounting academics and practitioners. In addition, this research generates knowledge based on the experience of the Australian universities in teaching forensic accounting courses. This purpose can be accomplished by conceptualising, measuring and analysing data on forensic accounting education through non-numerical data. The research utilises qualitative methodologies to formulate specific research questions and reach an accurate understanding of the issue being studied based on how it has been experinced by the participants of the study. Therefore, this research has employed semi-structured interviews (Gaskell 2000; Rao & Perry 2003, 2007; Minichiello et al. 2008; Qu & Dumay 2011; Silverman 2015) and document analysis (Bowen 2009; Silverman 2015). Qualitative data from interviews with practitioners and academics and qualitative data from Australian universities websites are collected to explore curricular and pedagogical issues in forensic accounting education. Figure 2.3 illustrates the research paradigm.

Figure 2.3: Research paradigm, compiled by the author



2.3.4. Educational theories relevant to accounting education

There are many theories associated with accounting education. Helliar (2013) advocates three educational theories primarily relevant to accounting education. These theories are constructivism, experiential learning and situational learning. Constructivism has a long history in cognitive psychology within higher education and is rapidly becoming the dominant espoused theory in education (Wang et al. 2013). Constructive learning theory provides instruction on how to foster students' independent learning through the alignment of learning outcomes through teaching and learning activities and assessment (Biggs 1996). Under

constructivism theory, the learning process is student-centred, where students' abilities are stimulated to result in the generation of ideas, self-reflection, knowledge application and problem-solving (Walsh 2007).

Situated learning theory is usually affiliated with apprenticeships or internships as a learning approach (Lave 1988; Lave et al. 1991; Lave 1993; Matsuo 2012). This theory is built on the claims by Dewey (1938) that it is necessary to differentiate between education "for" and "through" occupation. Gee (1997, 243) defines situated meaning as "the concept is based on students learning the values, attributes and cognitive practices of their profession or community of practice before engaging in their real work and can be done on-campus at universities or off-campus."

Experiential learning theory stems from the work of Kolb (1984) which includes a comprehensive model consisting of four stages of the learning cycle. This model provides an understanding of the education and learning approach as a lifelong process based on intellectual traditions of philosophy, cognitive and social psychology (Kolb 1984; Kolb & Kolb 2005, 2006; Kolb 2015). Kolb's theory of experiential learning affirms all the significant aspects of active learning and the cognitive processes of learning and considers an array of individual differences (Kolb 2015). Experiential learning theory will be used in this thesis as discussed in subsection (2.3.7) of this chapter and chapter 5 (paper 3).

These three educational theories focus on the learning approach, pedagogy, assessment, and learning styles rather than the curricula components and what should be integrated into the curricula (Helliar 2013). Thus, this research will bring to the forensic accounting literature the theoretical work of Bernstein (1990, 1996, 1999, 2000, 2003), which is devoted to understanding curricula reform, classification, and legitimacy; as discussed in subsection (2.6) of this chapter and as used in the second paper (chapter 4). In addition, the third paper (chapter 5) of this thesis uses experiential learning theory (Kolb 1984; Kolb & Kolb 2005, 2006; Kolb 2015) and the signature pedagogies (Shulman 2005a, 2005c, 2005b, 2008) as a theoretical framework to explore the pedagogy of forensic accounting.

2.3.5. Educational theories used in forensic accounting research

Huber and DiGabriele (2015a, 31) stated:

> *"To understand the purpose of research in forensic accounting, we need to understand forensic accounting as a social field. If the research methods used in forensic accounting research, do not further the purpose of forensic accounting research then the usefulness of the research and its results are greatly diminished."*

Forensic accounting education has been given increased attention in the last few decades (Groff 1989; Rezaee et al. 1992; Hegazy et al. 2017; Botes & Saadeh 2018; Howieson 2018). Despite these efforts, forensic accounting literature has been criticised for lacking theoretical foundations (Huber & DiGabriele 2015a, 2015b). The major theory that is evident in forensic accounting literature is the fraud triangle theory (LaSalle 2007; DiGabriele 2009b; Free 2015). The fraud triangle theory is a behavioral-psychological framework developed by Cressey (1950, 1953) to provide a logical interpretation to the reasons of why people commit fraud (Dorminey et al. 2012; Murphy & Free 2015). Thus, the fraud triangle theory is appropriate for forensic accounting research only within a specific context (criminal behaviour and motivations toward conducting financial crimes).

According to Huber and DiGabriele (2015b), many studies have been published in forensic accounting and accounting journals over the period between 2000 and 2014 on various forensic accounting topics using a variety of research methods. However, there is little forensic accounting research that explicitly uses a specific theoretical lens (Rebele et al. 1998a; Rebele et al. 1998b; Watson et al. 2007; Apostolou et al. 2010; Apostolou et al. 2013; Apostolou et al. 2015, 2016, 2017, 2018). There are some researchers whom implicitly refer to theoretical lenses such as experiential learning theory (Brickner et al. 2010; DiGabriele 2010, 2012; Kern & Weber 2016) and active learning theory (Kleinman & Anandarajan 2011).

2.3.6. Basil Bernstein theory of pedagogic device and knowledge structure

Through a period of more than 30 years, Basil Bernstein has developed theoretical work in the sociology of education (Bernstein 1975, 1990, 1996, 1999, 2000, 2003). His early work has been grounded in the sociology of children education, which has led him to develop a large sociological theory concerned with the pedagogic communication and curricula formation. Bernstein's theoretical work in higher education has analysed influences on the curriculum formation process and explored the existence of rules when knowledge is relocated to curricula

(Robertson 2007). Bernstein's work has been widely cited in the education research of many fields including history education (Shay 2011; Bertram 2012; Reitano & Winter 2017), sociology education (Luckett 2009), and physics education (Sin 2017). In addition, Bernstein's theoretical work has been used to develop further theoretical work by different researchers, such as the legitimation code theory (Moore et al. 2001; Maton 2006, 2007).

Bernstein developed his theoretical work on the complex theoretical work of Pierre Bourdieu (Bernstein 1999; Singh 2002; Clarence 2013). His concepts of field and resources are similar to those proposed by (Bourdieu 1991). Bernstein develops the concept of the pedagogic device which outlines the potential pedagogic discourse to take place in any educational process. The pedagogic device allows and legitimises "the potential discourse that is available to be pedagogised" (Bernstein, 2000, p.27). In addition, Bernstein's (1999) concept of knowledge structure describes the structure of the discipline's knowledge (for example, the structure of physics' disciplines knowledge is based on a strict scientific approach while history disciplines knowledge has a more multifaceted grounding). Furthermore, the concept of knowledge structure identifies how a student can successfully gain knowledge in different disciplines. (Bernstein 1999).

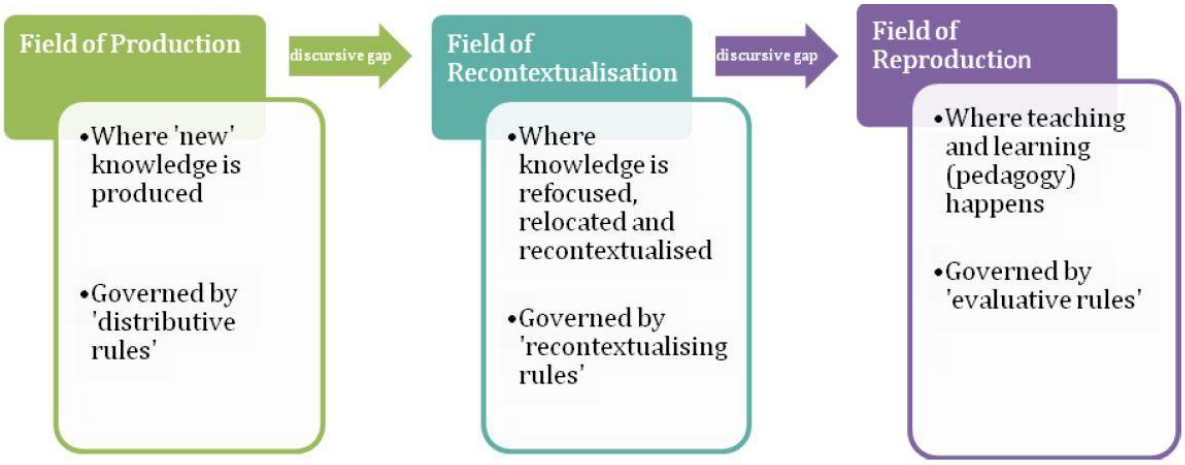
2.3.6.1. The pedagogic device

According to Bernstein (1975), to transfer any educational message to the students, there should be a synergy through three message systems; curriculum, pedagogy and evaluation. Bernstein (2000) defines curriculum as valid knowledge, pedagogy as the valid transmission of knowledge, and evaluation as the valid realisation of this knowledge. Accordingly, there are three fields of activity comprised by the pedagogic device. These fields are the field of production (research), the field of recontextualisation (curriculum development) and the field of reproduction (teaching practice) (Bernstein 2000).

The pedagogic device is governed by the "distributive rules, recontextualising rules and evaluative rules" (Clarence 2013, 32) (see Figure 2.4 below). These rules have the capacity to regulate and control what is regarded as legitimate discourse. Knowledge is created in the production field then relocated into curricula in the field of recontextualisation, and finally, it is taught to students through pedagogy in the field of reproduction. When knowledge is

relocated between the fields of the pedagogic device a discursive gap may occur according to the rules in operation.

Figure 2.4: The pedagogic device (Bernstein 2000); source (Clarence 2013, 33)

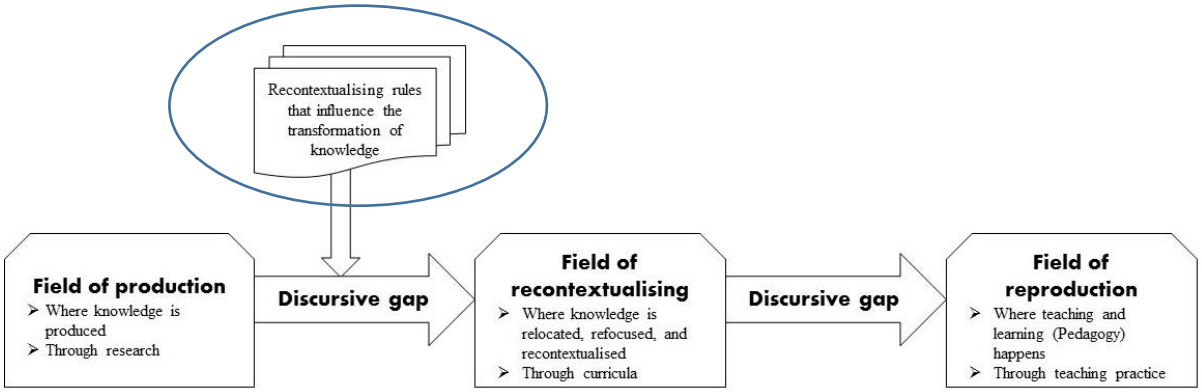


Recontextualisation rules form and govern the official knowledge and the pedagogic discourse (Clarence 2013). They are the official recontextualising field (ORF) and the pedagogic recontextualising field (PRF) (Bernstein 2000, 2003). First, the ORF comprises the "specialized departments and sub-agencies of the State and local educational authorities together with their research and system of inspectors" (Bernstein, 1990, 192). Second, the PRF includes "university departments of education, together with their research" (Singh 2002, 576); and "specialized media of education, weeklies, journals, and publishing houses together with their readers and advisers" (Bernstein, 1990, 192).

Bernstein differentiates between what is conveyed (the educational message) and the underlying principles that organise the content and distribution of what is delivered (Luckett 2009). The critical rules are the recontextualisation rules whereby knowledge produced at one place is selectively conveyed to places of reproduction. The pedagogic device is an attempt to explain the common principles that are carried out when the transformation of knowledge happens between the production and reproduction fields (Bernstein, 1996). More precisely, these rules include electing a discourse or part of a discourse from the created knowledge (field of production). This thesis evaluates the formation and transformation of forensic accounting knowledge into the curricula. The pedagogic device is described as "the ensemble of rules or procedures via which knowledge is converted into classroom talk, curricula and online

communication" (Singh 2002, 571). The Bernstein's theory of the pedagogic device provides researchers with definite criteria/rules to explain the macro and micro-structuring of knowledge and the relations of powers which control the constituting process of knowledge (see Figure 2.5).

Figure 2.5: Components of the pedagogic device (Adapted by the researcher).



As shown in figure 2.5, an adaptation of figure 2.4 has been developed where a new object has been included (highlighted in the ellipse), which emphasises the recontextualising rules that influence the transformation of knowledge between the field of production and the field of recontextualising. In comparison, figure 2.4 does not explicitly recognise the role of recontextualisating rules in specific disciplinary context. This thesis emphasises this rules to explore the inconsistencies in forensic accounting curricula and to understand the formation process of forensic accounting curricula.

The essence of the pedagogic device theory stands on emphasising the rules which can influence curricula formation (Bernstein, 1996, 2000). Particularly, how knowledge of a certain discipline could be transferred from research outputs and industry knowledge 'field of production' to the universities 'field of recontextualising' (Singh 2002). In forensic accounting education literature, few evidence have seen to report on what factors may influence forensic accounting curricula formation, all these factors are identified as a 'regulative rule' which directly linked to the universities capacity and time table (Rezaee & Burton 1997; Seda & Kramer 2009). For example, Rezaee & Burton (1997) mentioned that the lack of flexibility in the universities' curricula and the lack of specialised textbooks in forensic accounting had hindered the offering of forensic accounting education.

2.3.6.2. Knowledge structure

According to Bernstein (1999), the structure of knowledge describes the internal structure of specific knowledge, the positional construction of their fields or areas of practice and identifies the forms of acquisition for successful performances for the students. Bernstein (1999, 157) argued that there are two types of knowledge structure which he has called them the "Horizontal and Vertical Discourse". These two types of knowledge structure are seen oppositional rather than complementary, Bernstein (1999, 159) describes the horizontal discourse as follows:

> *"A horizontal discourse entails a set of strategies which are local, segmentally organised, context specific and dependent, for maximising encounters with persons and habitats."*

The horizontal discourse is characterised as 'segmentally differentiated', which indicates that a one knowledge segment in a discipline may or may not have any consequence to other knowledge segments (Bernstein 2000: 157). According to Bernstein (1999), the horizontal discourse is graphically represented as L1, L2, L3, L4, L5, L6, L7…Ln. Commonly; a horizontal knowledge structure is embodied by the social science disciplines, such as history and sociology.

The second is the vertical "hierarchical" discourse, characterised as a non-segmental and organized knowledge (Bernstein 1999: 161). The hierarchical knowledge structure characterized as non-segmental knowledge, where knowledge segments are organised to be 'hierarchically' related. Commonly, a hierarchical knowledge structure is embodied by the social science disciplines, such as chemistry or physics. Bernstein (1999: 159) describes the vertical discourse as follows:

> *"Briefly, a vertical discourse takes the form of a coherent, explicit, and systematically principled structure, hierarchically organised, as in the sciences, or it takes the form of a series of specialised languages with specialised modes of interrogation and specialised criteria for the production and circulation of texts, as in the social sciences and humanities."*

According to Bernstein (1999), the vertical discourse is graphically represented as the triangle. Bernstein (1999, p 159) described the triangle represents is vertical discourse taking the form of a coherent, explicit, and systematically principled structure, hierarchically organised, which are represented as a series of specialised languages; that for this study would relate to forensic accounting professional language. He portrayed the base of his triangle as signifying horizontal discourse, which entails a set of local, segmentally organised, context specific and dependent strategies for maximising encounters with persons and habitats; a form of knowledge, usually every day or 'common-sense' knowledge (p. 159). From this study's perspective, the horizontal structure would relate to a non-forensic accountant but may include the routine knowledge of an accountant or non-accountant.

This thesis attempts to identify the rules that influence forensic accounting curricula formation within the framework of Bernstein's pedagogic device theory (Bernstein 1990, 2000) and the concept of pedagogic discourse (practice produced in the field of recontextualisation). Accordingly, using a Bernstein pedagogic device theoretical lens (Bernstein 1996, 2000, 2003), and the concept of knowledge structure (Bernstein 1999), this thesis develops an understanding of the structure of forensic accounting curriculum within the Australian higher education context. These theoretical lenses have been used in chapter 4 (second paper).

2.3.7. Experiential learning theory

Kolb (1984: 41) defines learning as:

> *"The process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience."*

With the increasing emphasis on curriculum reforms to cope with the market need, life-long learning educators are advised to integrate more experiential components into their pedagogies (Bremser & White 2000; Jelinek 2017). They are encouraged to move from teacher based approaches of learning to students based approaches (Biggs 1996). Educational researchers have advocated abandoning the traditional learning activities (chalk and talk) to more experiential learning activities where the student is able to build work-related competencies (Sin et al. 2012; Mihret et al. 2017). In accounting education, researchers have recommended using the experiential learning approach. For example, Marriott (2004) claims that the use of

experiential examples in accounting education helps in enhancing students' cognitive ability and understanding of business. Another example has been provided by Crawford et al. study (2001), which advocated the use of experiential techniques to develop interviewing skills for accounting students.

Drawing on the theoretical work of John Dewey, Kurt Lewin, Jean Piaget, William James, Carl Jung, Paulo Freire, Carl Rogers and others, Kolb (1984) developed the experiential learning theory and explored how experiential learning can enhance students' performance in higher education. Kolb and Kolb (2005, 193) stated that experiential learning is a "philosophy of education" based on experience. Kolb (1984) has built the experiential theory on the following six propositions[5].

1. Learning is best conceived as a process, not in terms of outcomes. To improve learning in higher education, the primary focus should be on engaging students in a process that best enhances their learning—a process that includes feedback on the effectiveness of their learning efforts. As Dewey notes, "[E]ducation must be conceived as a continuing reconstruction of experience: . . . the process and goal of education are one and the same thing".
2. All learning is relearning. Learning is best facilitated by a process that draws out the students' beliefs and ideas about a topic so that they can be examined, tested, and integrated with new, more refined ideas.
3. Learning requires the resolution of conflicts between dialectically opposed modes of adaptation to the world. Conflict, differences, and disagreement are what drive the learning process. In the process of learning one is called upon to move back and forth between opposing modes of reflection and action and feeling and thinking.
4. Learning is a holistic process of adaptation to the world. Not just the result of cognition, learning involves the integrated functioning of the total person— thinking, feeling, perceiving, and behaving.
5. Learning results from synergetic transactions between the person and the environment. In Piaget's terms, learning occurs through equilibration of the dialectic processes of assimilating new experiences into existing concepts and accommodating existing concepts to new experience.

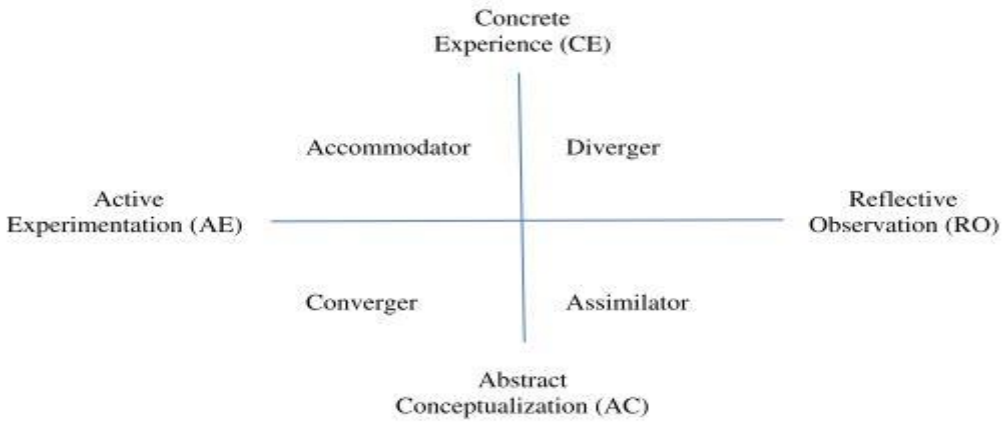
[5] All the six propositions have been directly quoted from Kolb (2005, 194)

6. Learning is the process of creating knowledge. experiential learning theory proposes a constructivist theory of learning whereby social knowledge is created and recreated in the personal knowledge of the learner. This stands in contrast to the "transmission" model on which much current educational practice is based, where pre-existing fixed ideas are transmitted to the learner.

The experiential learning model (figure 2.7) represents four stages of knowledge grasping and knowledge transforming. A student may enter at any stage but should follow a spiral sequence of the cycle. Kolb (1984) defines these stages as concrete experience (CE); reflective observation (RO); abstract conceptualisation (AC) and active experimentation (AE). That means the experience is translated through reflection into concepts, which guides students for active experimentation and choice of new experience. Kolb concluded that the different stages are associated with different learning styles and that as every learner has a different learning style, the student learns better when a course is presented in a way that is consistent with his or her preferred learning style. Kolb (1984) also argues that it is imperative for the student to be aware of alternative learning styles. This would allow them to help themselves acquire knowledge in multiple learning situations. According to Kolb and Kolb (2006), students adopt different learning styles in different situations, but they inclined to favour one learning style over others. He identified four learning styles; each one is associated with a different way of solving problems.

According to Kolb (1984), the combination of a learner's ability on abstractness over concreteness (AC-CE) and action over reflection (AE-RO), drew polarised abilities that lie on different points of a continuum. These two dimensions were also hypothesised to be orthogonal. The perpendicular axis drew the knowledge grasping dimension, or the apprehension dimension, by which knowledge can be understood through apprehension (the concrete experience extreme) or by comprehension (the abstract conceptualisation extreme), or by a mix of both. The horizontal axis depicts the knowledge transformation or knowledge construction dimension. The construction can be achieved via Intention (the Reflective Observation extreme), or via Extension (Active Experimentation). The four resulting learning styles are divergers (CE/RO), assimilators (AC/RO), convergers (AC/AE), and accommodators (CE/AE) (see Fig. 2.7).

Figure 2.6: Kolb's experiential learning model (Manolis et al. 2013)



The augmentation of higher education in many countries and the increasing emphasis on curriculum reforms to correspond with the market needs, student approaches to learning and life-long learning has meant that Kolb's ideas have influenced the work of educators, particularly those involved with students in higher education. Kolb's theory of experiential learning affirms many significant aspects of active learning and the cognitive processes of learning (Healey & Jenkins 2000). The experiential learning model expounded by Kolb (1984, p. 4) pursues a framework for examining and strengthening the correspondence among education, work, and personal development. The theory offers a valid and plausible framework for many researchers, and it is often the main theory referred to in works on experiential learning in accounting, management, and economics higher education (Baker et al. 1986; Auyeung & Sands 1996; Holman et al. 1997; Auyeung & Sands 2003; Kolb & Kolb 2005; Helliar 2013).

Kolb's theory is useful in structuring and sequencing the pedagogy and answer questions about how to teach a course in a favourable way that improves student learning (Healey & Jenkins 2000). Since personal experience plays a significant role in affecting the student's self-efficacy, the experiential learning approach tends to expose the student to different learning styles. Hence, the student will gain valid forms of meta-cognitive abilities and become a self-directed learner. The experiential learning model prioritises experience as the base for the learning process. Kolb argues that the transformation of experience creates the student's ability to apply information to actual situations (Manolis et al. 2013).

This theoretical lens can be of particular use to education researchers because it provides logical reasoning for structuring and sequencing the pedagogy that suits a wide range of students. In addition, the theory brings a new focus on the importance of experience in learning. This research analyses current forensic accounting educational practice (curricula and pedagogy) within the Australian universities and forensic accounting practitioners and academics' perception toward the usefulness of adopting varied pedagogical approaches. Therefore, the theory of experiential learning has been used in this study to understand the purpose underlying the use of various teaching activities in forensic accounting courses within the Australian higher education context. This thesis underpins on the experiential learning theory in developing an interpretation of the data in terms of understanding the valid experiential learning tools that allow preparing for professional education. This will be discussed in more depth in chapter 5 (paper 3).

2.3.8. Signature pedagogies

The value of the pedagogy and the particular methods of teaching that relate to each profession has become essential to be observed in order to equip students with more related hands-on experience. During "the Carnegie Foundation's studies of preparation for the professions", Shulman (2005a, 53) explored the teaching method most relevant to prepare future practitioners in different fields including lawyers, engineers, clergy, nurses and physicians. Shulman described the characteristics of the professions and the similar characteristics of the methods used to equip future practitioners in their fields. In doing so, the concept of "signature pedagogies" of the profession was coined and introduced by (Shulman 2005a, 52). Shulman argues that signature pedagogies represents the unique methods and modes of teaching linked with the disciplines, which students are taught in the major aspects of professional work. Shulman has influenced research in the different fields, and signature pedagogies has been used to explore many disciplines' pedagogies, including medical studies (Cooke et al. 2010), technology education (Laurillard 2013), business (Colby et al. 2011), history education (Calder 2006) and social work education (Wayne et al. 2010).

For Shulman (2005a), signature pedagogies shape the character of future practice and symbolise the values and hopes of the professions. The author argues that the concept and idea of signature pedagogy could be used to enhance our understanding of the "personalities, dispositions, and cultures" of the disciplines (Shulman, 2005, 53a). The concept of signature

pedagogies supports various purposes in the professions. According to Shulman (2005a), signature pedagogies also improve and sustain the pedagogical consistency of the educational programs of a profession within institutions. Moreover, signature pedagogies report vital information about the feature of a discipline as the signature pedagogy communicates what transfers the knowledge. Therefore, signature pedagogy communicates the epistemological underpinning of any areas of professional practice. Signature pedagogies serve all disciplines; however, Shulman noted that the professions are more likely than the other academic disciplines to promote distinctive pedagogies. This may be because professional disciplines face difficulty in measuring up to the standards of practice not just of the theory.

> *Thus, in medicine many years are spent learning to perform like a physician; medical schools typically put less emphasis on learning how to act with professional integrity and caring. In contrast, most legal education involves learning to think like a lawyer; law schools show little concern for learning to perform like one (Shulman 2005a, 52).*

Shulman (2005) noted that signature pedagogies designate shared qualities, these qualities are characterised as pervasive in a professional domain, habitual and routine-oriented and encourage pedagogical inertia. In addition, signature pedagogies represent some transformation of three pedagogical forms (pedagogies of uncertainty, pedagogies of engagement and pedagogies of formation). Signature pedagogies bestow one of three temporal patterns (Shulman 2005a). The pervasive initial pedagogy that shapes and indicates professional preparation, the pervasive capstone apprenticeships and the sequenced and balanced portfolios. These characteristics happen across structures such as surface structures, deep structures and implicit structures (Shulman 2005c, 2005a, 2005b, 2008). According to Shulman (2005a), professions can be featured by their inherent tensions. Shulman argued that these tensions are never entirely corrected. However, they must be managed and balanced with every action. Signature pedagogy addresses these tensions and provides students with the abilities to deal with these tensions.

> *Signature pedagogies are important precisely because they are pervasive. They implicitly define what counts as knowledge in a field and how things become known. They define how knowledge is analysed, criticized, accepted, or discarded. They define the functions of expertise*

> *in a field, the locus of authority, and the privileges of rank and standing. As we have seen, these pedagogies even determine the architectural design of educational institutions, which in turn serves to perpetuate these approaches. (Shulman 2005a, 54)*

Signature pedagogies make a distinction when they are used since they create "habits of the mind, habits of the heart, and habits of the hand" (Shulman 2005a, 59). Signature pedagogies indicate the cultures of professional work and contribute to the student's early socialisation into a field. Regardless of the applied method to teach students, it will shape how professionals act, thus, it is crucial to examine the signature pedagogies for a profession. Consequently, this will lead to know how teaching and learning might be improved. This thesis 777depends on the concept of signature pedagogies in exploring the teaching method that may enhance forensic accounting education. Particularly, using the signature pedagogy lens will contribute to understand which pedagogies give forensic accounting students more understanding of forensic accounting real work and cultures of professional forensic accounting work. Therefore, this will be discussed in more depth in the third paper (chapter 5).

2.4. Chapter summary

This chapter includes two main sections; the first section presented a review of the literature and the second section provided the philosophical and theoretical framework underpinnings of the thesis. The first section of this chapter presented an overview of the forensic accounting definition, history, scope and competencies of forensic accountants. In addition, the review of literature covered the regulatory requirement of the forensic accounting profession and a comparison of the forensic accounting profession between some developed countries with a concentration of the status quo of forensic accounting in the Australian context. The main issues of this thesis in relation to forensic accounting education have been introduced in sections 2.2.4 and 2.2.5. These issues encompass the previous initiatives of education institutions to incorporate forensic accounting courses, the barriers to teaching forensic accounting education and the used pedagogies to teach forensic accounting. The second section of this chapter presented the philosophical position of the researcher and how the methodology has been constructed from this position. In addition, section 2.3.4, reviewed the common theories that accounting researchers have used in the accounting education research and section 2.3.5 reviews the used theories in forensic accounting research. Therefore, in this chapter, a justification of the used theoretical lenses has been illustrated. This included the use of the pedagogic device and knowledge structure theory (Bernstein 1999, 2000), experiential learning theory (Kolb 1984) and signature pedagogy (Shulman 2005a).

The next chapter presents the first paper of this thesis, which offers an understanding of the core and interdisciplinary topics of forensic accounting curricula within the Australian universities and the directions that Australian universities have taken in forensic accounting education. This has been done through conducting a qualitative thematic analysis of the forensic accounting curricula, handbooks and syllabi found on the universities websites.

Chapter Three: Forensic Accounting Core and Interdisciplinary Curricula Components in Australian Universities: Analysis of Websites

Hashem Alshurafat, Claire Beattie, Gregory Jones, and John Sands, (2019)

School of Commerce, University of Southern Queensland, Toowoomba, Australia

This research article has been accepted for publication in the Journal of forensic and investigative accounting. (In Press: Volume 11: Issue 2, Special Edition).

Statement of Contribution of Joint Authorship

Hashem Alshurafat (Candidate and Principal investigator of the manuscript)

Claire Beattie (Associate Supervisor and Co-author of the manuscript)

Gregory Jones (Associate Supervisor and Co-author of the manuscript)

John Sands (Principal Supervisor and Co-author of the manuscript)

This chapter is an exact copy of the paper, which has been prepared and presented in correspondence to the Journal style.

Forensic Accounting Core and Interdisciplinary Curricula Components in Australian Universities: Analysis of Websites

Hashem Alshurafat
Claire Beattie
Gregory Jones
*John Sands**

I. INTRODUCTION

The proliferation of fraud activities evident in high profile cases such as Enron, Arthur Andersen, Xerox, WorldCom, HIH Insurance, Harris Scarfe and One.Tel. and the associated emphasis on expert witness and litigation consulting underscore the need for forensic accounting education and training (Van Akkeren et al. 2013). Forensic accounting is a growing interdisciplinary specialisation, and therefore the preparation for this profession has attracted significant attention (Ainsworth 2001; Apostolou et al. 2010). Although the demand for forensic accounting has dramatically increased, the supply of forensic accounting education has not kept pace with it (Daniels et al. 2013) and there is little consistency in developing forensic accounting curricula. Individual curriculum design seems to be motivated by varying philosophical orientations about the perceived optimal approach (Smith & Crumbley 2009). This study aims to explore forensic accounting curricula construction within Australian higher education. We investigated the major topics of the Australian forensic accounting curricula and compared these to the fundamental features of the forensic accounting curriculum which have been posited in the literature.

A major obstacle facing forensic accounting is that education programs worldwide have not kept pace with the demand for this service (DiGabriele 2008). However, recently a dramatic rise in the availability of forensic accounting education and a major paradigm shift

*The authors are, respectively, a PhD candidate, lecturer, senior lecturer, and professor at University of Southern Queensland.

among colleges and universities has occurred (Seda & Kramer 2014). Despite this, some universities have opted to delay adopting such programs (Matson 2016) and there seems to be little consensus on how to uniformly integrate forensic accounting into the accounting curricula (Smith & Crumbley 2009; Seda & Kramer 2014).

In Australia, the forensic accounting profession has received attention from the professional accounting associations. CPA Australia manages the Forensic Accounting and Investigation Discussion Group (FAIDG), while the Chartered Accountants Australia and New Zealand (CA ANZ) has the Business Valuation Special Interest Group (BVSIG) and the Forensic Accounting Special Interest Group (FASIG) the latter of which has been replaced by the National Forensic Accounting Committee. Most recently, CA ANZ has collaborated with Macquarie University in administrating that university's forensic accounting specialisation. According to CA ANZ's website, this collaboration provides an educational pathway to strengthen members' existing chartered accountant qualification. Completion of the program demonstrates that the members have met minimum experience requirements in this area, with numerous advantages to the learners such as, expanding learners' career opportunities and expanding learners' network.

The Australian educational environment is undergoing significant reform, especially in accounting education (Freeman & Hancock 2011). Consequently, there is a promising environment for forensic accounting, both in terms of education and practice. Currently, universities in Australia provide a diverse range of courses to teach forensic accounting programs. However, Akkeren et al., (2013) reported that some universities provide a separate program in forensic accounting (diploma or masters), while others teach one or two courses of forensic accounting within their accounting programs.

This study is motivated by the rapidly increased demand for the forensic accounting profession as well as the extensive reforms in the regulation of higher education in both Australia and worldwide (Helliar, 2013). Based on the extant literature, this research examines two questions in relation to 40 Australian universities' websites. Firstly, what are the core curricula components and knowledge? Second, what are the nature and types of integrated interdisciplinary knowledge that at included in forensic accounting programs? Thus, the paper contributes to the forensic accounting literature by exploring the directions that Australian universities have taken in forensic accounting education. This study may also help instructors to improve forensic accounting courses content.

The remainder of this paper is structured as follows. The literature review is discussed in the next section. The third section, explains the research method used in this study. Findings of the study are introduced in the fourth section. Finally, a summary and conclusion are contained in the fifth section.

II. LITERATURE REVIEW

Curriculum and instruction design have received important attention from accounting education researchers (Apostolou et al. 2015, 2016). The body of forensic accounting literature is increasing and is U.S. centric (Huber 2012; Seda & Kramer 2015). Currently, there is a paucity of Australian academic research that explores the curricula components of forensic accounting (Chen & Van Akkeren 2012; Van Akkeren et al. 2013; Seda & Kramer 2014; Van Akkeren & Tarr 2014; Tarr et al. 2016). Therefore, we reviewed literature from existing international forensic accounting studies relevant to curriculum content knowledge. In this section, we provide a review of the international initiatives to design a forensic accounting curriculum. We also supply a review of the key topics of each core and interdisciplinary component as posited by the literature in the field. Finally, we provide a summary of the literature.

Curricula Models: Developing a Forensic Accounting Curriculum

Rezaee and Burton (1997) suggested four modules of forensic accounting education: which include topics such as investigation and law, fraud and fraud auditing, the financial reporting process and ethics. The United States based National Institute of Justice (NIJ) took the initiative to develop forensic accounting as a field of practice in 2003 as a result of the financial collapse of high-profile corporations such as Enron, WorldCom, and Adelphia, and other similar fraud scandals (Kranacher et al. 2008; Seda & Kramer 2015). This proposed curriculum has been tested and implemented in many U.S. universities (Curtis 2008a; Fleming et al. 2008; Young 2008). The primary intended outcome of the NIJ's program was to assist with a standard body of knowledge for forensic accounting and develop a model curriculum design for the field.

More specifically, Fleming et al. (2008) describe the course content knowledge of the Forensic Accounting and Fraud Investigation (FAFI) Graduate Certificate at West Virginia University (WVU), which was supported by the NIJ. FAFI encompasses 12 credit hours[1] over four courses[2] of study. The first course focuses on types of fraud, documents, sources of evidence, and analysis of internal and external fraud schemes with an emphasis on the skills needed to detect and investigate fraud. The second deals with the digital control environment, prevention and deterrence, digital evidence, digital detection and investigation including data mining, digital presentation and reporting tools, cybercrime, and electronic case management tools. The third and fourth courses concentrate on auditors' and fraud examiners' responsibilities to detect fraud, investigative techniques, interviewing skills, legal concepts, evidence management, criminology, and ethics.

[1] Credit hour refers to the weight of the whole program.
[2] Course is used here to refer to a 13-week semester-based system of learning that together form the educational program.

Most recently, the American Institute of Certified Public Accountants (AICPA) proposed a more condensed curriculum for forensic accounting. This initiative came in response to the increased demand for forensic accounting services and was an attempt to contribute to the future of the forensic accounting profession. The program aims to prepare students to become forensic accountants equipped to serve clients and their employers. It is designed to be a 3 credit course covering all essentials. The major topics included are professional ethics and responsibilities, civil and criminal procedure, evidence, discovery, litigation services, engagement and practice management, fraud prevention, detection and response, bankruptcy, digital forensics, matrimonial forensics, financial statement misrepresentation, economic damages and valuation. The curriculum corresponds with the certified financial forensics (CFF) exam content specification outline, which offers guidelines for educators to enhance their forensic accounting courses and for students to gain foundation level knowledge in forensic accounting.

The Core and Interdisciplinary Curricula Components

Forensic accounting as an interdisciplinary specialisation focuses on a balance between the disciplines of accounting, law (Tarr et al. 2016; Botes & Saadeh 2018), fraud and criminology (Daniels et al. 2013), ethics (Curtis 2008b), psychology, sociology (Ramamoorti 2008), intelligence, information systems, and information technology (IT) forensics (Pearson & Singleton 2008; Murthy 2010). Maintaining the balance between these integrated disciplines is the key to success in designing a forensic accounting curriculum (Kresse 2008). These are now discussed in more detail, with what is generally seen as the core components presented first.

Fraud

Fraud is often seen as the main topic of forensic accounting research and education. Consequently, the substantial role played by forensic accountants in the detection and

examination of fraud activities is an important component to be covered in the curriculum. The NIJ's proposed curriculum provides a comprehensive coverage of the fraud topics which a student of forensic accounting should learn (Kranacher et al. 2008). These include investigative techniques, proactive approaches to preventing, deterring, and detecting fraud, occupational fraud and abuse (Curtis, 2008b; Fleming et al., 2008) interviewing and interrogation techniques (Gates et al., 2011; Porter & Crumbley, 2012), procurement fraud (Curtis, 2008a; Kresse, 2008), the basic fraud triangle (LaSalle 2007; Trompeter et al. 2012), the key elements of fraud, red flags and fraud symptoms (Singleton & Singleton 2010), fraud risk assessment (Brickner et al. 2010), asset misappropriation (Lehmann 2015), corruption, false representations and fraud in financial statements (Sofianti et al. 2014) and fraud in a digital environment (Pearson & Singleton 2008). LaSalle (2007) argues that student understanding of appropriate fraud detection procedures would be enhanced if they were exposed to theoretical concepts such as the fraud triangle. This view has been supported by Brickner et al. (2010) who advocate incorporating fraud into the education program for all accounting students regardless of their chosen career path. In addition, Lehmann (2015) states that graduate students with an educational understanding of fraud report helped that this them to be more effective in their jobs, especially in developing fraud risk assessments and strategies to minimize the opportunity for fraud.

Law and Business Valuation

Forensic accounting is often concerned with identifying activities which are not legal. Therefore, forensic accounting educators are encouraged to pay attention to the adversarial nature of forensic accounting services. Legal frameworks, regulatory and court procedures are important components of the curriculum (Marychurch 2006; Curtis 2008b). Heitger and Heitger (2008) argue that a forensic accounting student should be able to function well in the heat of battle in the adversarial environment of litigation. Hence, educators and curricula

designers should take criminal law into consideration and should separate this from business law or the legal environment of business. This view is supported by Curtis (2008a) who concludes that significant attention should be given to legal and regulatory components in the forensic accounting curriculum. Prior studies have suggested that legal and regulatory training dealing with expert witnessing and testifying, cross-examination, communications, and report preparation (Seda & Kramer 2015) should be included in the curriculum.

Business valuation is a specialisation that forensic accountants may also practise (DiGabriele 2012). Many cases brought to the court's attention require testimony by an expert in business valuation (Durtschi & Rufus 2017). In this regard, students are required to have fundamental knowledge about the appropriate framework and methodology to use in order to justify the valuation decision, whether it is for quantifying loss and damage or delivering a calculation of asset values (Heitger & Heitger 2008).

IT Forensics

The use of digital investigative and analytical techniques is a significant component in any forensic accounting course (Murthy 2010). Consequently, it is essential for students to have an awareness of how to use technology in their future careers (Van Akkeren et al. 2013). Pearson and Singleton (2008) summarize the content knowledge for fraud and forensic accounting in a digital environment, which includes prevention and deterrence of IT risk and cybercrime, how IT is used in fraud, rules and laws of digital evidence, detection and investigation tools and techniques and using IT to report and communicate results in the legal environment.

Interdisciplinary Components: Ethics, Criminology, Psychology and Sociology

Although prior researchers have stressed the interdisciplinary nature of forensic accounting, there is little agreement on what should be integrated into the curricula as an

interdisciplinary component. Some argue that forensic accounting's interdisciplinary character has led to challenges in embedding its curricula in the higher education sector (Rezaee et al. 2004; Chen & Van Akkeren 2012). Some researchers have referred to criminology (Daniels et al. 2013), ethics (Curtis 2008b), psychology and sociology (Ramamoorti 2008) as the interdisciplinary components within the forensic accounting curricula. According to Kresse (2008), finding a proper balance between the disciplines of accounting, law, psychology, sociology and criminology is a challenging task for all forensic accounting curriculum designers, as each discipline has much to learn from the others.

Since forensic accounting encompasses investigating fraudulent activities, providing testimony at trial and cross-examination within the court, the highest ethical standards are essential for practitioners (Kern & Weber 2016). Accordingly, forensic accounting students should be familiar with the relevant ethical principles (Kleinman & Anandarajan 2011). Surveys of forensic accountant competencies have neglected the ethical side of forensic accounting work, while many papers in the field seem to equate ethics with the law and code of conduct (Howieson 2018). Ethical situations relevant to forensic accounting are not commonly discussed within business ethics courses (Curtis, 2008b). Therefore, this should be addressed within the forensic accounting curriculum. The integration of pertinent criminology, psychology and sociology will assist forensic accounting students to understand the behavioral roots of such criminals, in order to provide better fraud risk assessment and fraud prevention (Trompeter et al. 2012). The rationale behind incorporating sociology within the forensic accounting curricula derives from the role that forensic accounting plays in mitigating the impact on society from such crimes (Ramamoorti 2008).

Literature Summary

This study builds on and contributes to work in forensic accounting curricula components. The majority of studies in the field have focused on U.S. forensic accounting

curricula (Curtis 2008a, 2008b; Heitger & Heitger 2008; Kranacher et al. 2008; Young 2008; O'Bryan 2009; Smith & Crumbley 2009; Carpenter et al. 2011; Seda & Kramer 2015; Kern & Weber 2016), while there has been little evidence about the structure of the curricula in other countries (Van Akkeren et al. 2013; Seda & Kramer 2014). Thus, this study provides important insight into forensic accounting options for higher education in Australia. The detailed analysis of core and interdisciplinary content provides another contribution. Numerous studies have identified fraud as the main topic in most forensic accounting programs, with some concentration on the law. Little analytical attention has been given to digital forensic analysis and business valuation. We address this issue by demonstrating that such components are related both to forensic accounting education and to its practice.

III. RESEARCH METHOD

We contribute to the literature by providing insight into the directions that forensic accounting education has taken, which may help educators in developing their forensic accounting education offerings. We reviewed the websites of 40 Australian universities to ascertain the extent to which forensic accounting courses or programs of study are provided and to determine the educational models employed (stand-alone courses or programs of study). The website analysis method has been used by researchers predominantly in the U.S. to explore the structure of forensic accounting curricula (Rezaee et al. 2004; Hylton Meyer et al. 2010; Seda & Kramer 2014, 2015; Wang et al. 2016).

Data

The data gathering procedures started by identifying Australian universities that provide or have provided at least one course of forensic accounting. In the process of reviewing the websites, we commenced by locating the accounting, commerce or business programs of study then examined the structure of those programs in order to locate courses, minors, majors,

or program in the field of forensic accounting.[3] Two programs and one course were located outside of accounting departments or business schools.

The scope of this paper includes programs and stand-alone courses in forensic accounting, which reside in various schools within universities. We found few forensic programs and courses outside of accounting departments and/or business schools. These offerings were generally associated with the interdisciplinary components of forensic accounting such as criminology. For example, Charles Sturt University offers articulation sets in Fraud, Financial Crime and Investigations from its Graduate School of Policing and Security. These courses are heavily focused on national and international crimes. Similarly, the University of Technology Sydney offers Forensic Trust Accounting within the Bachelor of Design, Architecture, and Building. This course content exposes students to the principles of maintaining accounting records under the relevant statutory and regulatory requirements.

The university websites provided various ways to search for courses and programs. Therefore, we developed different strategies to complete the website survey. The keywords and keywords strings that were used encompassed [forensic] [accounting] [forensic accounting] [investigation] [fraud] [expert witness] [cybercrime] [business valuation] and [IT forensics]. Once we identified the courses and programs, we accessed the online course specification and program curricula to obtain a description of the related courses' and/or curriculum's components.

Analysis and Validity

We have reviewed all Australian university websites (n=40); the primary data for analysis is the information posted on these websites as related to the search terms. The content

[3] In Australia, there is no one word that is used consistently by universities to describe the single 13-week content for a semester of learning within an educational program. Some universities use either 'unit' or 'subject' or 'course' or the terms interchangeably. For the purpose of this paper, the term 'course' is used to describe a single subject 13-week period which constitutes a semester of learning within an educational program.

generally included forensic accounting curricula, handbooks and syllabi. Based on the features of the forensic accounting curricula that have been posited in the literature, we deductively analysed our data using qualitative thematic analysis via the NVIVO 11 software program.

NVIVO is a computer-assisted qualitative data analysis software (CAQDAS) and a code-and-retrieve index system. NVIVO is designed to allow users to conduct advanced analyses of electronic text data (Durian 2002). The role of NVIVO in this study is to support the researchers in managing, arranging, as well as coding of qualitative data in a systematic manner. We used NVIVO to code the website data and attach nodes to sections of the text. Nodes are used in this study to store coding about topics, concepts and themes. We also used NVIVO to conduct analyses such as search functions, text-string and text pattern searches.

The analysis of curriculum focused mainly on reviewing the core content knowledge and the interdisciplinary integration. Describing and interpreting phenomena based on results generated by analysing qualitative data requires rigour and robust validity checks (Maxwell 1992). In this study, researchers have scrutinized the trustworthiness, confirmability, and authenticity during all research phases, including the preparation, organization, and reporting of results. Additionally, all Australian universities were reviewed to satisfy the external validity of the data so that the results of the study may be generalized.

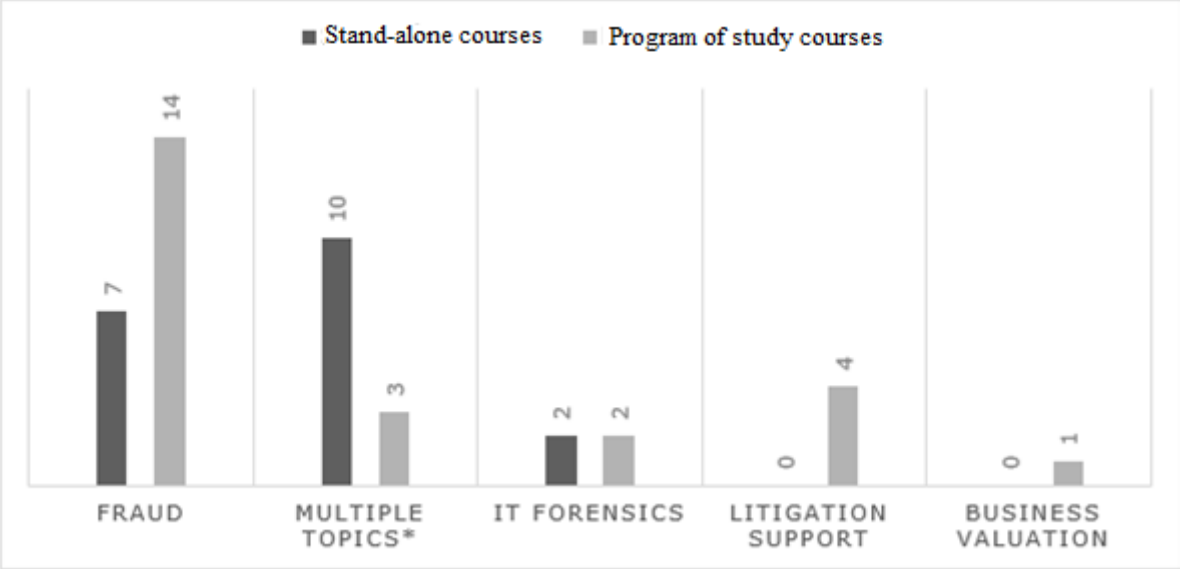
IV. FINDINGS AND DISCUSSION

A web-based analysis of forensic accounting curricula in Australian universities revealed significant variations in curricula design and content knowledge. Our analysis covers the courses and programs of forensic accounting within Australian universities. As shown in Appendices A and B, we identified 19 stand-alone courses of forensic accounting offered by 13 universities. In addition, four universities offer five programs which encompass 24 courses in total. Three universities have ceased to offer forensic accounting courses and one university

dropped it as a program of study. Within the courses, we found four core topics (see Figure 1). Figure 1 illustrates the topics of the forensic accounting courses across universities.

Chen and Van Akkeren (2012) found that a specialized university qualification in forensic accounting is not common in Australia. In addition, Van Akkeren et al. (2013) stated that forensic accounting education exists only in four Australian universities. Thus, our findings show an increase in forensic accounting education within Australian higher education.

Figure 1: Topics in forensic accounting education.



* Multiple topics refer to the courses that include more than one core or interdisciplinary component

Forensic Accounting Core Content Knowledge Analysis

Accounting and Auditing Knowledge

Accounting and the investigation of fraud constitute the fundamental basis for all forensic accounting education; accounting is assumed as prerequisite knowledge. Understanding accounting concepts facilitates students' knowledge of accounting transactions and records. Forensic accounting courses aim to extend this knowledge to understand the forensic process from an accounting perspective and understand how accounting supports investigation (Kranacher et al. 2008). For example, courses offered by RMIT University enable students to differentiate between the purpose of auditing and forensic accounting and the

relationship between them. Students will develop an understanding of the fraud triangle and its application to the audit risk model in business as well as an understanding of forensic accounting codes of conduct, audit standards and common concepts of fraud, corruption, and other forms of dysfunctional behavior. The RMIT University website provides the following information about the content of the course ACCT1111 Assurance and Forensic Accounting:

> *The course aims to develop a conceptual and practical approach to auditing and forensics to ensure you gain a complete understanding of the audit and forensic investigation process for accountants.*

Fraud

Fraud matters are not just the dominant topic of forensic accounting research (Huber & DiGabriele 2015), we found that fraud is also the main subject of forensic accounting education. All the universities that provide forensic accounting education focus on fraud. Out of 43 courses, 21 (49%) primarily discuss fraud issues. In fraud education, students are exposed to the investigation side of forensic accounting practice and to the array of tools and techniques that are necessary for it. By way of an introduction to the theory and concepts underpinning fraud topics, students are exposed to the nature and types of fraud and financial crimes at different levels such as those committed by individuals, companies, and at the government level.

The fraud courses generally focus on the fraud triangle (pressure, opportunity and rationalisation) as a theoretical basis for understanding the reasons for fraud and its causes. Integrated topics cover many content areas: fraud investigations, detection and prevention, anti-money laundering, counter-terrorist financing, asset tracing and recovery, white-collar crime and combating financial crime; financial failures, financial statement manipulation, consumer fraud, credit card fraud, in-house financial crime prevention, tax evasion, Ponzi and pyramid schemes and forms of management and employee abuse; and drivers of fraud, techniques and emerging trends of fraud, motivations for fraud, symptoms of fraud, scope and scale of fraud.

As an example, the La Trobe University website provides details of the course content in ACC3FOA Forensic Accounting:

> *In this subject, you will focus on the investigative side of fraud examination as part of an introduction to theory and concepts underpinning this topic.*

Law

Some coverage for the litigation role of forensic accountants is evident; four courses specifically include this knowledge. The University of Wollongong, in a course now discontinued, exposed forensic accounting students to the litigation framework in Australian and international legal jurisdictions, which is considered essential knowledge to those wishing to become forensic accounting practitioners (Heitger & Heitger 2008). In law related courses, students should demonstrate a sound understanding of the theoretical and operational concepts and methodologies relevant to independent forensic accounting expert work in investigation and resolution of disputes or suspicions of inappropriate behavior and follow statutory and common law requirements and directions of courts.

We find the major content in litigation courses covers the following topics: methods and techniques for gathering evidence, adducing, admissibility, evaluation and presentation of evidence in a manner most suitable for the court, the purposes of a relevant matter and the law of evidence; the expert witness role, the key elements of an expert witness report and cross-examination of an independent expert report; and criminal and civil jurisdictions from a national and international legal perspective. The University of Wollongong's website provides details of the course content in the course ACCY951 Forensic and Litigation Framework.

> *This subject will address the role of law in dealing with cases of fraud or misconduct, and the legal framework within which the forensic accounting process, from preliminary stages, to investigation and ultimately to prosecution or litigation.*

Business Valuation

We find that courses at most Australian universities pay less attention to forensic accountants' roles in business valuation. This is in contrast with a course offered by Macquarie University within the Graduate Diploma in Forensic Accounting, which primarily covers loss and damage and other dispute engagements. The University of Melbourne and the University of Wollongong emphasize quantifying loss and damage functions within one course of their respective programs. The University of Melbourne's website describes the content of the course ACCT90026 Forensic Business Processes:

> *Specific issues in dispute analysis are covered including, the quantification of loss, business valuation in the context of disputes, and the preparation of expert witness reports.*

However, students should also be exposed to the nature and purpose of forensic accounting in business valuation (DiGabriele, 2012). Students should gain theoretical and practical knowledge to justify the methodology used in the valuations process and calculation of economic loss. Training in this area is insufficient and there is potential for more efforts from academics to teach this in a way that equips a student to deal with real work duties.

IT Forensics

IT forensics received attention in four courses, which seems minimal considering the importance of this knowledge to forensic accounting practitioners (Pearson & Singleton 2008). All four of these IT forensics courses are offered by the Queensland University of Technology (QUT). In IT forensics, students are introduced to a broad range of tools and techniques for digital data analysis. The integrated topics cover the following content: design and development of computerized accounting systems including all system cycles; cybercrimes, accounting controls in an electronic environment and e-commerce fraud; data analysis using advanced MS office and SAS software, data mining visualisation and warehouses, cloud

computing, GPS and mobile applications; and decision support systems, forensic and business intelligence applications and issues, social networking technologies for business intelligence and forensic investigation, triangulating and documenting evidence. Queensland University of Technology's website provides the following information about the course AYN453 Financial Forensics and Business Intelligence:

> *The aim of this course is to provide students with an understanding of the features, uses and design strategies for IT-enabled managerial decision support, business intelligence systems and forensic investigation.*

Interdisciplinary Courses: Embedding of Ethics and Criminology

These courses focus on forensic accounting's unique role in a diverse range of business disciplines. Of the thirteen interdisciplinary courses identified, ten of these are stand-alone and three are courses within forensic accounting programs. The ethical and criminology aspects of the forensic accounting work received significant attention within the courses and programs of forensic accounting education, whereas there is scant attention to integrating psychology and sociology.

Ethics and Sociology

In this area, students will be exposed to content knowledge such as ethical and legal principles, socially responsible behavior, ethical dimensions of the anti-money laundering, counterterrorist financing, fraud investigation, and financial crime. Forensic accounting students in the Queensland University of Technology are required to appreciate ethical principles when analysing and responding to business issues in national and international contexts. For students to make an informed ethical decision and think critically about the ethical dimensions of different forensic accounting roles, they also need to understand how ethics can affect and guide real forensic accounting work. Queensland University of Technology's

website provides the following content details for its Graduate Certificate in Business - Forensic Accounting Program:

> *Demonstrate and apply knowledge of ethical and legal principles and practices in analysing and responding to business issues.*

Criminology and Psychology

Both the Master of Forensic Accounting offered by the University of Wollongong and the Master of Fraud and Financial Crime offered by Charles Sturt University provide students with knowledge of criminology. Students conceptualize the indicators of inappropriate behavior to initiate and plan investigations to prove or refute such suspicions. Such university programs and courses of forensic accounting concentrate on the application of criminology theories to previous corporate financial scandals.

The integration of criminology within forensic accounting courses yields many opportunities for students to reflect. Firstly, it enables them to examine the factors that have led to the commission of financial crime activities. Second, it enables them to discuss and describe governance and ethics issues concerning business criminology. Finally, integrating criminology into these courses complies with the desired learning outcomes of representative articles in this field regarding the various investigative tools, skills and abilities for this role (Brickner et al. 2010; Kern & Weber 2016). Sub-topics of criminology may include: existing forms of complex and sophisticated criminal activity such as drug trafficking, human trafficking, illegal arms trade and financial crime; emerging forms of criminality such as environmental crime, trafficking of cultural property, piracy and organ trafficking; and the nature of criminology and ethics with regard to fraud, the environment, and governance.

V. SUMMARY AND CONCLUSION

In this paper, we explored the forensic accounting curricula construction within Australian universities by performing a thematic analysis on the curriculum as presented on

university websites. This study has considered the major topics of the ideal forensic accounting curricula as described by the literature to inform its investigation about the status quo of programs and courses in Australia.

Our findings highlight core and interdisciplinary curricula components; we demonstrate the necessity of accounting and auditing as prerequisite knowledge for any student wishing to engage in a forensic accounting course. As supported by literature, we have explored the incidences of fraud, litigation, business valuation, and IT forensics as core components and criminology and ethics as interdisciplinary components within the forensic accounting courses and programs of study. We have found that significant attention has been given to fraud which corresponds with the prior international research in this field (Seda & Kramer 2015; Tiwari & Debnath 2017). However, there is little coverage of the role of forensic accounting in courts and the legal framework in which forensic accountants practice. In this regard, universities should revise their offerings to sufficiently cover the substantial legal duties of forensic accounting including expert witness roles, dispute resolution, preparing expert reports and responding to cross-examination.

We note that courses lack topics covering business valuation and IT forensics content, both of which are necessary for practical forensic accounting work. Business valuation includes, for example, quantification of loss and damage, wrongful death and personal injury, insolvency and bankruptcy, business interruption, insurance claims, mergers and acquisitions, and delivering an opinion and estimation of assets and liabilities values. However, only one university provides a whole business valuation course while two universities include a module within their forensic accounting courses. Only one university offers substantive IT forensics. This limits students' exposure to one of the most desired work skill areas; technological skills (Murthy 2010). Practitioners in the field depend on many computerized systems and software to assist them in duties such as fraud investigation, data analysis, and data visualisation. In

regard to interdisciplinary integration, our findings show a primary focus on ethics and criminology and little attention to psychology and sociology.

The implications of these results are important to practitioners, standard setters, accounting researchers and educators as they provide directions for the redesign of forensic accounting curriculum. We suggest that the forensic accounting profession would benefit by exposing its students to the specialized forensic accounting knowledge that is in demand across a broad range of industries and sectors such as business valuation, expert witness, business intelligence, and dispute resolution. Another suggestion is to develop curricula that integrates more aspects of psychology and sociology in order to enhance students' comprehension of the behavioral roots of criminal conduct and the social impact of fraud.

The current study has the following limitations. Firstly, some universities' websites provide inconsistent and inadequate information about the courses. Second, the information provided herein was correct at the time of reviewing universities' websites. Nevertheless, the researchers believe that this study will set the stage for more academic inquiries in the field of forensic accounting education within the context of Australian higher education. Further research will provide more opportunities to understand the reason for the variation that exists in Australian forensic accounting courses. Future researchers may investigate the different aspects of forensic accounting education to enhance and develop the profession as whole. The educational aspects of forensic accounting to be examined by future researchers may incorporate the pedagogical approaches and the associated learning objectives. Moreover, diverse cultural contexts or a larger sample of universities from other contexts would allow a refined understanding of the issue examined. This paper addresses an important issue, the extent of forensic accounting offerings in Australia. Understanding how forensic accounting is taught in Australia contributes to improving the knowledge of forensic accounting education across the globe.

APPENDIX A

Australian universities that provide stand-alone forensic accounting courses only

University	Program of Study	Forensic Accounting Courses	Status
Deakin University	Master of Professional Accounting	• Governance and Fraud	Still Offered
Macquarie University	Master of Professional Accounting	• Emerging Issues in Financial Crime Fraud • Detection, Investigative Techniques	Still Offered Still Offered
Monash University	Master of Professional Accounting Master of Accounting	• Forensic Accounting and Fraud Examination	Still Offered
RMIT University	Bachelor of Business (Accountancy)	• Forensic Business Investigation • Assurance and Forensic Accounting • Forensic Accounting	Still Offered Still Offered Still Offered
University of South Australia	Stand-Alone Subject	• Failure, Fraud and Forensic Accounting	Discontinued
University of Southern Queensland	Master of Business	• Forensic Accounting	Discontinued
University of Technology Sydney	Bachelor of Design, Architecture And Building	• Forensic Trust Accounting	Still Offered
Western Sydney University	Master of Commerce (Accounting)	• Corporate Failure and Forensic Accounting	Discontinued
University of Melbourne	A Breadth Track Master of Accounting	• Business Forensics and Fraud • Forensic Business Processes	Still Offered Still Offered
Queensland University of Technology	Bachelor of Business (Accountancy) / Minor Option	• Forensic Digital Analysis • Governance, Fraud and Investigation • Forensic and Business Intelligence	Still Offered Still Offered Still Offered
La Trobe University	Bachelor of Business (Accountancy) / Minor Option	• Forensic Accounting	Still Offered
Griffith University	Master of Accounting	• Forensic Accounting	Still Offered
Swinburne University of technology	Bachelor of Accounting	• Forensic Accounting	Still Offered

APPENDIX B

Australian universities that provide specific forensic accounting programs of study

University	Programs of Study	Forensic Accounting Courses	Status
Queensland University of Technology	Graduate certificate in business (forensic accounting)	• Electronic Commerce Cycles • Financial Forensics and Business Intelligence • Forensic Accounting and Investigation	Still Offered
Charles Sturt University	Master of fraud and financial crime (Articulation set)*	• Financial Crime Control and Risk Management • Foundations in Financial Crime • Forensic Accounting, Asset Tracing and Recovery • Investigating financial crime – prosecuting financial crime • Contemporary Issues in Financial Crime	Still Offered
	Master of Investigating (Articulation set)*	• Investigation Principles • Risk Management • Multi-Agency Investigation • Emerging Issues and Professional Practice in Trans-National Crime Investigation	Still Offered
University of Wollongong	Master of Forensic Accounting (Articulation set)*	• Introductory Forensic Accounting • Forensic and Litigation Framework • Fraud and Failure • Investigative Processes • Advanced Investigative Techniques • Independent Accounting Expert Reports • Evidence and the Forensic Accountant • Compliance, Assurance and Governance	Discontinued
Macquarie University	Graduate Diploma in Forensic Accounting	• Investigation Engagements • Loss and Damage and other Dispute Engagements • Forensic Accountants and the Courts • Forensic Accounting	Still Offered

***** The Master, Graduate Diploma, and Graduate Certificate make up an articulated set of courses and credit is given in each higher-level course for the subjects completed in the lower.

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Chapter Four: Curriculum Formation: A Case Study from Forensic Accounting

Hashem Alshurafat, John Sands, Gregory Jones, and Claire Beattie, (2019)

School of Commerce, University of Southern Queensland, Toowoomba, Australia

This article has been submitted to a high ranked journal in the field of accounting education.

Statement of Contribution of Joint Authorship

Hashem Alshurafat (Candidate and Principal investigator of the manuscript)

John Sands (Principal Supervisor and Co-author of the manuscript)

Gregory Jones (Associate Supervisor and Co-author of the manuscript)

Claire Beattie (Associate Supervisor and Co-author of the manuscript)

This chapter is an exact copy of the paper, which has been prepared and presented in correspondence to the Journal style.

Curriculum Formation: A Case Study from Forensic Accounting

Abstract

Forensic accounting education has become an increasingly significant issue in recent years. In Australia, universities have acknowledged the industry's growing relevance, and there have been attempts to address gaps in the provision of forensic accounting education. Despite these efforts, forensic accounting education is still frequently omitted in university programs. In addition, there is significant variation within the curricula between universities. This paper seeks to identify the factors that influence the transformation of forensic accounting knowledge into university programs. Based on Bernstein's theoretical lens of the pedagogic device and knowledge structure, the study adopts a case study approach to collect the perspective of practitioners and academics. The findings identify the various factors that influence the formation process of forensic accounting curricula. Consequently, this research is beneficial for universities and educational bodies planning to develop forensic accounting courses and programs.

Keywords: Forensic Accounting, Curricular Development, Australia

Introduction

An increasing number of accounting employers are seeking students equipped with forensic knowledge (Hegazy et al. 2017). This has resulted from changes in accounting and auditing practice which require accountants to take on more investigative, adversarial (Jenkins et al. 2017), and technological tasks (Marshall & Cali 2015). In Australia, there has been an increasing amount of interest in forensic accounting both in the field of practice and education . According to), the existing forensic accounting curricula have been developed based on a range of divergent approaches. Inconsistency in the forensic accounting curricula has also been attributed to the interdisciplinary nature of forensic accounting and the lack of agreement on how this specialisation should be defined (Smith & Crumbley 2009). In the Australian universities, variations have been noted among the existing forensic accounting curricula. This research explores the factors that have led to this range of divergent views and inconsistency in forensic accounting education. More precisely, this research identifies the factors that have influenced the transition of forensic accounting knowledge into university curricula. This research has been conducted using the theoretical lens of education sociologist Basil Bernstein (1999, 2000, 2003) which provides a framework to define and understand curricula reform, classification, and legitimacy.

The exact nature of what is meant and represented by forensic accounting is fragmented due to its interdisciplinary origins and its emergence as a new discipline (Botes & Saadeh 2018). For example, training in forensic accounting requires an interdisciplinary approach which includes foundation knowledge in accounting, auditing, law, criminology, and technology (Botes & Saadeh 2018). However, it is unclear how these aspects should be tailored and presented in a logical framework to allow students to develop the necessary practical skills. Forensic accounting education requires the contribution of various existing disciplines to build on existing expectations and advance new ideas and techniques (Ramamoorti 2008). The academics' perceptions of what graduates need to know may not match the expectations and requirements of forensic accounting employers. Consequently, there is currently little consensus on what should be included in the core and multidisciplinary subjects of forensic accounting curricula (Rezaee et al. 2004; Kresse 2008; Smith & Crumbley 2009).

This study was conducted in Australia to obtain an understanding of how practitioners and academics perceive forensic accounting education as a field of study and to understand what

influences the forensic accounting curricula formation process. Educational collaborations between accounting bodies, practitioners and universities have also been increasing. In addition, the increased fraud and cybercrimes in the Australian business context, there is also a growing demand for specialists skilled in the field of forensic accounting (Van Akkeren et al. 2013; Sofianti et al. 2014). Therefore, the results of this study contribute to the forensic accounting education literature and the practice of forensic accounting by identifying the factors that influence the development of relevant curricula. The research question is posed as follows:

R.Q. Which factors influence the development of forensic accounting curricula?

The remainder of this article is structured in the following manner. The next section of this article reviews the relevant literature in two key areas: forensic accounting practice and developing the forensic accounting curriculum. The theoretical framework is presented in section three. Details of the research design and the methodology are contained in section four. The findings from this study and the discussion of the findings are explained in section five. Finally, the summary of the significant findings, implications and guidance for future research has been presented in the final section.

Literature review

Forensic Accounting Practice

To develop an understanding of the optimal structure of the forensic accounting curricula, it is necessary to comprehend the intrinsic requirements and structure of forensic accounting practice (Matson 2016; Howieson 2018). Forensic accounting tasks can be classified into four main categories, each of which encompasses a collection of sub-tasks. First, litigation services which emphasise the role of expert witnesses, particularly as the rise in litigation consultation highlights the need for skilled forensic accountants (Rezaee et al. 2016). Analysing complex financial transactions and presenting evidence to the court in terms of financial, civil and criminal matters places forensic specialists at the forefront of financial litigation and business dispute resolution processes (Domino et al. 2017). In court, forensic accountants are required to act as consultants, provide expert witness testimony, or perform other roles, such as court-appointed expert, trier of fact, referee, arbitrator, or mediator (DiGabriele 2008). An expert witness can be defined as a specialist qualified by virtue of specialised knowledge, skill,

experience or training to assist in illustrating and communicating conclusions of facts in areas beyond the comprehension of an average person, which forensic accountants are uniquely qualified for (Huber et al. 2015).

Forensic accountants also provide investigative services. Fraud can be extremely expensive, and one of the best ways to reduce this cost is to take steps to prevent fraud from occurring (Rezaee et al. 1992). Forensic accountants perform a significant role in detecting, preventing and prosecuting those individuals who are involved in criminal activity within the individual, corporate and governmental levels (Brickner et al. 2010; Carpenter et al. 2011; Kern & Weber 2016; Association of Certified Fraud Examiners 2018). Other investigative services that forensic accountants provide may encompass anti-corruption and anti-bribery investigation and other kinds of financial crime at governmental, corporate, or individual levels (O'Bryan 2009; Daniels et al. 2013; Hegazy et al. 2017; Souza 2017).

Business valuation is another key task within the forensic accounting domain (Tiwari & Debnath 2017). Forensic accountants provide the analysis which is used to quantify the losses and damages which have occurred through circumstances such as business interruption, breach of contract, lost profit, bankruptcy and insolvency risk assessment (DiGabriele 2009; Huber & DiGabriele 2015). In addition, forensic accountants deliver business valuation assessments; these assessments may be used for insurance claims, reconstruction of accounting records (DiGabriele 2012; Grubb 2015), mergers or acquisitions. Forensic accountants may also be asked to deliver estimates relating to the value of the intellectual property (Jalilvand & Kostolansky 2016; Grubb 2017).

The provision of IT forensics also falls within the remit of forensic accounting. Forensic accountants worldwide have become conscious of both the necessity and advantages, of using information technology in their work, primarily for fraud detection (Van Akkeren et al. 2013; DiGabriele & Lohrey 2016). The typical auditor might not have the necessary skills to be able to provide IT forensics (Cook & Clements 2009). Specialist forensic accountants distinguish themselves by their ability to use various types of cyber evidence, for example, fingerprints in metadata and email headers data. Evidence used by forensic accountants could also exist in the volume of hidden data located on storage devices (Pearson & Singleton 2008). Therefore, forensic accountants working in the IT field provide the expert knowledge necessary to detect and analyse the information contained within IT systems.

Developing the Forensic Accounting Curriculum

The interdisciplinary nature of forensic accounting poses challenges for education providers in developing the curricula. According to Kresse (2008), forensic accounting educators should incorporate cover the law, criminology psychology and sociology knowledge. Another reason for the lack of consistency in forensic accounting has been provided by Cook and Clements (2009); (Smith & Crumbley 2009). These researchers argue that forensic accounting education has been negatively affected by stakeholders' conflicting views on what should be included when teaching it. This is consistent with the results of research conducted by Smith and Crumbley (2009). The results from the Rezaee and Burton study show a significant variation in views between two groups (accounting academics and forensic accounting practitioners) in regards to the mode and the tenor of the content of forensic accounting curricula. However, there is general agreement on the benefit and importance from forensic accounting education (Rezaee & Burton 1997; Heitger & Heitger 2008; Kranacher et al. 2008; Kresse 2008; Tiwari & Debnath 2017).

In addition to the interdisciplinary nature of forensic accounting, there are other challenges confronting the development of these programs. (Rezaee & Burton 1997); Howieson (2018) asked a group of academics and forensic accounting practitioners to rank a set of seven perceived obstacles to the delivery of forensic accounting education. Lack of financial resources was ranked as the most significant reason among all participants. Later research reaffirmed what had been reported with respect to the process of developing forensic accounting education programs. Rezaee and Burton (1997) reinforced the need for financial resources stating that

> *Not every program has the opportunity to leverage the use of 12 panel-planning members, 32 additional subject matter experts, or has available a $600,000+ grant to develop their curriculum in FFA (p 80).*

Participants in the Fleming et al. (2008) study suggested that the lack of flexibility in curriculum content, lack of instructional materials including textbooks, lack of administrative interest and support, and lack of faculty interest, were also significant factors that may restrict the delivery of forensic accounting education. Further, participants ranked both of the lack of authoritative standards and guidelines and the lack of student interest as obstacles to forensic accounting education. These results were reinforced by a later study which revealed further obstacles, including the lack of qualified faculty to teach forensic accounting topics and the

area perceived to have insignificant importance for inclusion in the curriculum, lack of job opportunities related to this area and a perceived lack of need for fraud courses (Rezaee & Burton 1997).

Initiatives to construct a robust forensic accounting education program are more advanced in the Anglo-American environment than in Australian and other countries such as the UK, Ireland and China. There is evidence that forensic accounting education is well recognised in the USA literature. For instance, Seda and Kramer (2009) proposed four solutions which could be used to promote and improve forensic accounting offerings. First, they suggested that forensic accounting should be combined into the 150-hour accounting programme[1]. Second, forensic accounting education should have dual purposes: one to convey and teach specialised knowledge in this area; and two, to promote and develop fraud investigation processes and techniques. Third, accounting departments at universities should take the initiative in developing the forensic accounting curriculum. Fourth, accountants who have specialised in forensic accounting services should periodically provide support to universities who offer forensic accounting courses, to ensure alignment between forensic accounting education and practice.

Additionally, in November 2008, Issues in Accounting Education published a special issue on fraud and forensic accounting education. It provided information and examples for those universities which were considering offering a course, concentration, or major in forensic accounting. The edition encompassed studies that provided narrative stories about some universities' experiences in providing forensic accounting education (Rezaee et al. 1992; Curtis 2008b; Fleming et al. 2008; Kresse 2008). Other studies in the edition proposed a sample forensic accounting curricula model (Young 2008) and knowledge to be integrated in forensic accounting curricula, such as, ethics and litigation (Curtis 2008a; Kranacher et al. 2008), IT forensics (Heitger & Heitger 2008), as well as psychology and sociology of fraud (Pearson & Singleton 2008).

[1] The 150-hour requirements in accounting programs lead to the parallel grant of a Bachelor and Master of Accounting at the completion of all program requirements. This program is organised to satisfy the education requirements of the New York State Education Department for C.P.A.

Literature Summary

This study builds on findings from prior research which have yielded recommendations that promote the necessity of developing a forensic accounting curriculum that embraces the broad area of specialities within the forensic accounting field (Rezaee & Burton 1997; Curtis 2008b; Ramamoorti 2008). The literature review highlights four categories of practice for forensic accounting; fraud investigation (Peterson 2003; Fleming et al. 2008; Kresse 2008; Ramamoorti 2008), business valuation (Sofianti et al. 2014), litigation services (Heitger & Heitger 2008; DiGabriele 2012), and IT Forensics (Pearson & Singleton 2008; Cook & Clements 2009; Quirin & O'Bryan 2015). Consequently, the broadness of practice has led to a poor definition of forensic accounting education (Seow et al. 2016) and a lack of consistency in the curricula content between universities (Smith & Crumbley 2009; Botes & Saadeh 2018). In addition, it is evident that multiple barriers are confronting the consistent delivery of forensic accounting education. Other barriers identified by prior research include the lack of financial resources, lack of flexibility in curriculum content, lack of instructional materials, and lack of faculty interest (Rezaee & Burton 1997; Seda & Kramer 2015). Overall, prior research suggests that developing an understanding of the structure and content of forensic accounting practice is one of the most important factors to consider when fostering the delivery of forensic accounting education. Thus, this research has primarily focused on identifying the key factors most likely to influence the formation and structure of forensic accounting curricula.

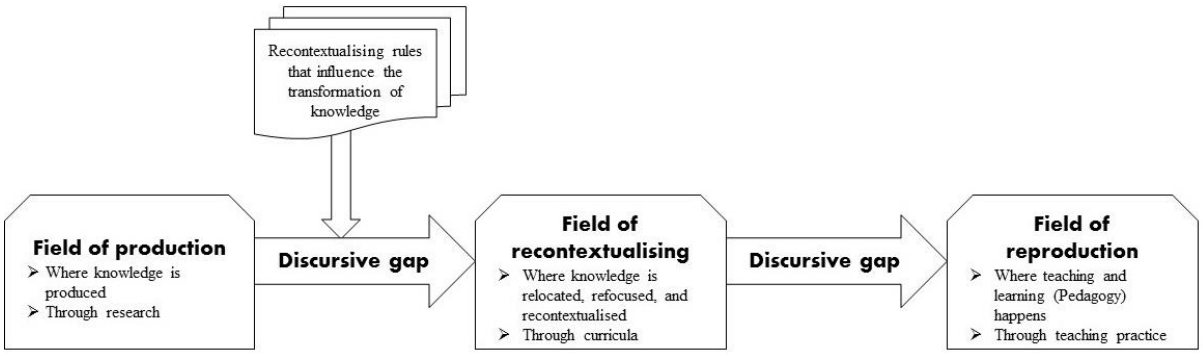
Theoretical guidance and research questions

According to Seda and Kramer (2009), to convey any educational knowledge to the students, there should be a synergy through three educational messages; curriculum, pedagogy and evaluation. Bernstein (1975) defined curriculum as valid knowledge, pedagogy as the valid transmission of knowledge, and evaluation as the valid realisation of this knowledge. Bernstein (1990, 1996, 2000, 2003) introduced the pedagogic device theory which amalgamates these three educational messages. Three fields of activity are comprised by the pedagogic device; the field of production (research), the field of recontextualisation (curriculum development) and the field of reproduction (teaching practice) (Bernstein 1996, 2000). This paper attempts to identify the rules that influence forensic accounting curricula formation within the framework of Bernstein's pedagogic device theory (Bernstein 1990, 2003) and the concept of pedagogic

discourse[2] (practice produced in the field of recontextualisation). The concept of pedagogic discourse includes two elements, the first is the instructional discourse which implies that appropriate curricula design will impart specific content and skills, and the second is the regulative discourse which creates the social and moral order of the curriculum.

Bernstein (2000) claimed that when knowledge is relocated from the field of production to the field of recontextualisation, a 'discursive gap' might occur. This 'discursive gap' implies that recontextualising rules[3] are the reason for the difference in the produced knowledge between the field of production and the field of recontextualisation. The recontextualising rules usually comprise the historically and culturally arbitrary ideas about the purpose of education (Bernstein 2003). Singh (2002, 443) argued that the recontextualising rules are "curriculum developer's ideas around the purpose of education, the ideal moral and social order, staged notions of an ideal learner or graduate, and notions of how learning occurs". For Luckett (2009), the 'recontextualising rules' shape the knowledge discourses presented in the curricula. Figure 1 illustrates the components of the pedagogic device.

Figure 1: Components of the pedagogic device (Bernstein 1990).



This paper also utilises the concept of knowledge structure Bernstein (2000) in which two discourses represent structures of knowledge. The first is the horizontal discourse which can be described as segmentally differentiated; this means that one knowledge segment in a discipline may or may not have any consequence to other knowledge segments (Bernstein 1999). Bernstein defined the discourse of horizontal knowledge structure as "a series of

[2] Pedagogic discourse is a 'recontextualising principle which selectively appropriates, relocates, refocuses, and relates other discourses to constitute its own order and orderings' (Bernstein, 1990, p. 184).

[3] Recontextualising rules regulate the formation of specific pedagogic discourse. These are rules for 'delocating a discourse, for relocating it, for refocusing it' (Bernstein, 1996, p. 47).

specialised languages with specialised modes of interrogation and criteria for the construction and circulation of texts" (Bernstein 1999: 162). According to Bernstein (1999), the horizontal discourse is graphically represented as L1, L2, L3, L4, L5, L6, L7…Ln. Generally, a horizontal knowledge structure is exemplified by the social science disciplines, such as history and sociology.

The second is the vertical "hierarchical" discourse, described as non-segmental and organised knowledge (Bernstein 1999: 161). The hierarchical knowledge structure is characterized as non-segmental knowledge, where knowledge segments are organised to be 'hierarchically' related.

The base of the triangle represents the greatest number of propositions while the tip of the triangle represents the theory that encapsulates all the propositions. Generally, a hierarchical knowledge structure is exemplified by the science disciplines, such as chemistry or physics. Accordingly, using a Bernstein pedagogic device theoretical lens (Bernstein 1996, 1999, 2000, 2003), this paper develops an understanding of the structure of forensic accounting curriculum within the Australian higher education context. The following section outlines the method used to gather and analyse the data.

The core idea of the pedagogic device theory is positioned on emphasising the rules which determine curricula development (Bernstein, 1996, 2000). Mainly, how knowledge of a specific discipline could be carried from research outputs and industry practice 'the field of production' to the universities curricula 'field of recontextualising' (Singh 2002). In literature, little evidence have been noticed to summarise what factors may impact on forensic accounting curricula formation; all these factors are classified as a 'regulative rule' which directly linked to the universities capacity and time table (Rezaee & Burton 1997; Seda & Kramer 2009). For example, Rezaee & Burton (1997) stated that the dearth of rooms in the universities' curricula and the need for textbooks in forensic accounting had been mentioned as obstacles for forensic accounting education.

Research design

This research abides by the understanding that research in an educational setting to understand curricular issues can be achieved through case studies (Bernstein 2006). By adopting a case study design, the data was collected from two coherent multi-sited groups (Creswell 2013).

Case studies are a qualitative approach to research and are applied when a researcher aims to answer questions which examine how and why something occurred (Stake 1995).

Method

This research used a case study approach to systematically investigate the curricula formation of forensic accounting education in the Australian university context. This was based on two groups encompassing forensic accounting academics and practitioners. In addition, curricula, handbooks and courses specification from Australian universities (which provided either a forensic accounting program or standalone units) were reviewed to triangulate information and gain an understanding of curricula construction for forensic accounting education. While there may be elements of forensic accounting embedded in standard accounting courses, this research only focused on courses that were identified as addressing forensic accounting education. This research has been motivated by the uniqueness of forensic accounting education and the researchers' role in this project has been to develop an intrinsic understanding of the influencing rules that affect forensic accounting curricula as viewed through Bernstein's theoretical perspective (Stake 1994; Yin 2009).

Ethical considerations

The research followed ethical codes of conduct in qualitative interviewing. Ethical clearance was obtained through the authors University[4]. After initial introductions, the researchers ensured that the interviewee carefully read the participant information sheet and signed the consent form. The participant information sheet and the consent form provided information about the research topic, the contact details of the researchers, the rights of the interviewee, and the purpose of audio recording the interviews. Confidentiality of the interviews was emphasised. The selected respondents were informed that they were free to withdraw their consent at any point during the process.

Data collection

Data was primarily collected through semi-structured interviews. These interviews were complemented by analyses of internal documents on the existing forensic accounting curricula. Interviews were conducted with practising forensic accountants and with academics

[4] Ethical Approval No. will be provided after completion of the blind peer review process

responsible for designing or teaching forensic accounting courses at the higher education level to gain an understanding of the factors that influence the creation of forensic accounting knowledge and forensic accounting curricula. Secondary documents were collected to provide further evidence about the current state of forensic accounting curricula in the Australian context.

Curricula documents

The data gathering procedures started by reviewing all Australian universities websites. Among 40 universities, 15 universities provide forensic accounting education. The university websites provide various ways to search for the courses and degrees. Therefore, the researchers developed different strategies to effectively survey the websites; keywords strings that were used included [forensic] [accounting] [forensic accounting] [Investigation] [fraud] [expert witness] [cybercrime] [business valuation] and [IT forensics]. Once the courses and programs had been identified, the websites were searched for the online course specifications and program curriculum to gain a description of the related courses and the curriculum's structure.

Semi-structured interviews

The interview process with the first group of the participants 'practitioners' took place over three months during July 2017 and September 2017. After completing the practitioners, the interviewing process with the forensic accounting academics has initiated and lasted for three months during November 2017 and January 2018.

An interactive approach was taken with the interviewees to encourage them to respond comfortably. The interactive approach was used as prior studies have demonstrated that it enhances the process of soliciting interviewees' perceptions or interpretative capabilities (Cresswell 1998). Throughout the fieldwork, the recorded interviews were reviewed after each interview to reflect on the initial observations and to plan for the next interview. Nine Australian universities and seven forensic accounting firms provided research access to participants. These universities and firms are considered appropriate cases because they are actively involved in forensic accounting education and practice. Eighteen interviews were conducted, allocated between academics (9 interviews) and practitioners (9 interviews). Interviews with academics were conducted with those who have experience in teaching forensic accounting courses (six of them have developed forensic accounting degrees and/or

units). Interviews with practitioners were conducted with those who had senior roles within their organisations (e.g. director, partner etc.), and who were working in the interconnected areas of forensic accounting. The interviews used semi-structured questions addressing curricula and practice issues (see Appendix A).

According to Silverman (2015), semi-structured interviews are helpful when a researcher wants to capture important and often hidden facts of social science and humanities. All 18 interviews were conducted either at the interviewees' offices or by telephone in a one-to-one setting. This method of conducting interviews was recommended by Minichiello et al. (2008) who argues that this approach to interview design encourages participants to contribute in a manner that would encourage the interviewees to share relevant information and respond to complex and exploratory questions. The average length of the interviews was approximately 45 minutes.

Sampling methods and demographic characteristics of the interviewees:

This research has used purposive and snowball approaches to sampling (Silverman 2015). The use of these sampling methods was chosen in anticipation of recruiting individuals who were most likely to be interested in the topic and expert in the subject being studied. The invitations to participate in the interview process were initially made by telephone and emails. For both groups of interviewees, there was an initial review of the forensic accounting firm websites and the forensic accounting courses specifications on the universities websites. From this analysis, a contact database was established. To further expand the list of potential interviewees, when the initial interviews were conducted, the participants were asked if they could recommend additional participants.

The first group of interviewees were forensic accounting practitioners. Due to the extensive experience and senior positions held by the participants, they were assessed as being appropriate to represent the perspectives of practitioners. The interviewed practitioners had substantial experience which ranged from 13 years to 45 years, with an average of 25 years. Their particular areas of forensic accounting speciality are shown in table 1.

Table 1: Demographic attributes of practitioners

Interviewee Code	**Year of experience**	**Position**
P1	Over 20 years	Director
P2	28 years	Partner
P3	20 years	Founding director
P4	Over 20 years	Partner
P5	Over 20 years	Partner
P6	Over 30 years	Partner
P7	Over 30 years	Founding director
P8	Over 45 years	Founding director
P9	Over 13 years	Director

There are six academics were responsible for the design of forensic accounting courses. Interviews were conducted across seven forensic accounting firms operating in most Australian states and these firms were considered of the most reputable and largest in this field. Academics who participated in the interviews represented nine different universities across Australia with different academic ranks as presented in table 2.

Table 2: Demographic attributes of academics

Interviewee Code	**Academic rank**
A1	Professor
A2	Senior Lecturer
A3	Associate Professor
A4	Senior Lecturer
A5	Lecturer
A6	Senior Lecturer
A7	Lecturer
A8	Lecturer
A9	Professor

In order to gain a holistic insight into the practitioner perspective, interviews were conducted with participants from firms with various forensic accounting specialisations. Table 3 shows which speciality area the interviewed practitioners are selected from. In addition, table 3

provides scores of the dominant area of activities for the practitioners. The segments of forensic accounting services that practitioners primarily participated in were fraud investigation (7), litigation services (9), business valuation (5), and IT forensics (5). Due to the adversarial and investigative nature of the forensic accounting work (Silverman 2015), the predominance of specialities was related to litigation services, fraud investigation and business valuation with dominant scores of 4, 3 and 2. IT forensic is one of the primary services supplied by forensic accountants but does not dominate the work of a forensic accountant. Forensic accountants use the output of IT forensic analysis and IT forensic skills to reach decisions in engagement matters (Heitger & Heitger 2008). In this research sample, five practitioners have some roles in IT forensics but no single practitioner identified as solely working in IT forensics. Table 3 shows the analysis of the services provided by the practitioners who participated in the interviews.

Table 3: Core activities

Interview	**Fraud investigation**	**Litigation services**	**Business valuation**	**IT forensics**
P1	Y	Y	D	N
P2	D	Y	N	Y
P3	N	D	N	N
P4	Y	Y	D	Y
P5	D	Y	N	Y
P6	D	Y	N	Y
P7	N	D	Y	N
P8	Y	D	Y	N
P9	Y	D	Y	N
Total Y+D	7	9	5	5
Total D	3	4	2	0

Y= yes, undertakes activities in this area
N= no, does not undertake activities in this area
D= dominant area of activities

In the academic group, interviews were conducted with nine academics who had experience in teaching and developing forensic accenting units or programs of study at the university level. As shown in Table 4, these interviewees provided perspectives on the various topics of services

and applications of forensic accounting. The segments of forensic accounting topics covered by the participants' courses were fraud investigation (9), litigation services (9), business valuation (2), and IT forensics (1). The predominance of teaching activities centred on fraud investigation, litigation services and IT forensics with scores of six, two and one respectively. This demonstrated that fraud investigation and litigation services are the dominant focus within Australian forensic accounting education and that there is a lack of the forensic education programs that offer business valuation and IT forensic skills and knowledge. This is consistent with findings from prior research (Seow et al. 2016).

Table 4: Course topics

Interview	**Fraud investigation**	**Litigation services**	**Business valuation**	**IT forensics**
P1	D	Y	N	N
P2	Y	Y	N	D
P3	D	Y	N	N
P4	D	Y	N	N
P5	D	Y	N	N
P6	Y	D	Y	N
P7	D	Y	N	N
P8	D	Y	N	N
P9	Y	D	Y	N
Total Y+D	9	9	2	1
Total D	6	2	0	1

Y= yes, undertakes activities in this area
N= no, does not undertake activities in this area
D= dominant area of activities

Data analysis

Each interview was recorded, and the recorded interviews were transcribed. In this paper, thematic analysis has been used following the steps suggested by (Seda & Kramer 2015). The data has been analysed using qualitative thematic analysis via the NVIVO 11 software program. The first step in the data analysis was to listen to each interview recording and take extensive notes. The transcripts were checked against the recorded interviews for accuracy. Coding started by performing preliminary jottings, these jottings enhanced the researchers'

latter collection of the fieldwork enquiry and established ideas for analytical consideration (Braun & Clarke 2006).

Initial coding was used to identify all important information in the data. Decisions over which elements should be coded were made when it was determined that the coded datum contributed to the construction of the findings or if the coded datum contributed to new insights that may enrich the overall contribution of the study. Once all data is initially coded, a list of the different codes is identified. The next step involved sorting the various codes into potential themes by considering the relationships between codes, subthemes and themes. This step concluded with themes, and sub-themes, where relevant excerpts and datum had been sorted in relation to them. In this stage, the researchers were open to all the emerged themes, and no themes were disregarded or abandoned.

The next stage was to refine the devised themes. Themes with little substantive data to support them have been disregarded, other themes have been collapsed together where the data within these themes merge meaningfully, and some themes have been broken down into separate themes when there are identifiable distinctions between their contents. This stage of theme refinement included two levels. The first stage included reading all the collated extracts for each theme to assess whether they formed a coherent pattern. In addition, the themes were reviewed to ascertain if they capture the meaning of the codes. The second level involved developing a satisfactory thematic map to visualise the data and provide an accurate reflection of the meanings evident from the data set.

After establishing a satisfactory thematic map and identifying the themes which accurately reflected the meanings in the data, the main aspects of each theme were refined. In addition, this stage included developing a clear definition and name for each theme. This process generated a detailed analysis for each theme, produced an overall story for each theme, checked the overlap between themes and provided accurate names for the themes. The final stage encompassed the final analysis and write-up of the findings which reinforced the rigour, and validity of the analysis. This stage also included identifying richly descriptive statements from the data set that could be used to illustrate the findings regarding curricula construction.

Validity, trustworthiness and authenticity

This research has adopted rigorous techniques to ensure research validity, trustworthiness and authenticity. Braun and Clarke (2006) suggested that triangulation is one way to verify the validity of a study. Triangulation can be performed by using data from multiple sources or analysing data using multiple investigators or multiple theoretical perspectives. This research used two data sources to triangulate data about forensic accounting education. In addition to triangulation to ensure the trustworthiness of the research, Glesne (2015, 96) provided a "15-points checklist" as a criteria list for what constituted a perfect thematic analysis. These criteria are related to transcription, coding, analysis and written report. This research followed this approach to ensure the validity of the data analysis.

Findings and discussion

The findings from this research have been reported and discussed under the following three themes:

- The discursive gap
- Knowledge structure
- Other curricular issues

The three themes have been emerged naturally from the interviews data and then have been interpreted through the used theoretical lens. These themes have been exemplified by reference to direct quotes from the participants and are elaborated in the following sub-sections.

The Discursive Gap

This theme explored the impact on forensic accounting knowledge when it is transformed (recontextualised / relocated) into the curricula. The theme includes four subthemes; the first is the offering mode and interdisciplinary nature of forensic accounting, the second is the agent problem, the third, is the social constraints and the fourth related to other factors. The first subtheme illustrated the nature of forensic accounting and topics and its sequences on the delivery mode of the discipline. The second subtheme considered how the educators'

(educational agent)[5] epistemological beliefs and dispositions influenced the transformation of forensic accounting in the educational context. The third subtheme illustrated how university policy and resources influenced the transformation of forensic accounting in the educational context. The fourth illustrated how contingent institutional factors influenced forensic accounting education in Australia. These are represented as the rules that influence forensic accounting knowledge transformation into curricula.

Offering mode and interdisciplinary nature of forensic accounting

In the interviews with the practitioners and academics, both groups noted the diversity of forensic accounting topics. Academics stated that forensic accountants provide a broad range of services and that this has led to complexities in combining these areas of speciality within one educational program. This is reinforced from the document analysis which identified a number of variations in both course content and offering mode. Of the five existing programs offered within Australia, three focus on a specific area of forensic accounting practice. Therefore, it appears that the integration of all forensic accounting specialities has been difficult to achieve. This is consistent with the findings of Braun and Clarke (2006). From a practical perspective, it is likely that the diverse and dynamic nature of services provided by forensic accountant pose difficulties for educators when designing coherent forensic accounting education programs. Participants within the practitioners' group made various comments on the diversity of the services they provide and the public perception of what they do, proposing that:

> *[…] everyone thinks, Oh, forensic accounting, that is very niche, that is very specialised. It is, but when you go into forensic accounting, you could easily divide forensic accounting training or education into twenty different subspecialties. (P3)*

> *It is a multi-disciplinary team, a combination of accounting, technology, investigative, analytical skills, data that together form the value of the team. (P2)*

Practitioners also expressed their appreciation for the diversity of activities within the industry:

[5] Educational agent refers to the educators who are associated by duties in forensic accounting curriculum formation and classroom preparation, this terminology (agent) has been borrowed from the theoretical work of Bernstein.

> *Because of the diversity in the matters that I deal with, it is interesting [work] (P1).*

Though the diversity of forensic accounting activities serves to motivate practitioners, they also perceive this diversity as problematic when trying to develop a coherent educational program.

> *[…] because the response to financial crime is not just an accounting response, holistic picture of response to financial crime has to bring in much more than just one discipline, it needs to bring in a wide variety. … A whole range of professions together help to tackle the problem that is a financial crime which is endemic in our society. (P4)*

These complexities in practice meant that practitioners queried the practicalities of developing comprehensive university forensic accounting programs.

> *[…] if someone does their Masters in forensic accounting – what have they actually trained in? I mean, is it insurance fraud? Is it corporate fraud? Is it ex-corporate – expert witness, economic loss damage assessments? Is it personal injuries assessments? Is it a compensation assessment? Is it land acquisition assessment? […] So, that is the problem. (P3)*

Academics provided a different argument. In the academic group, the majority of participants suggested that there was a need for ad-hoc or niche specialisations which covered the forensic accounting subfields and met the market expectations:

> *Somebody who has done that Masters degree would probably be somebody that one of these forensic firms would recruit (A1).*

Others academics linked the ad-hoc or niche offering mode to university policies and resources, where the academics tended to focus on internal agendas ahead of employer expectations:

> *[…] if you were a university that has a strong terrorism studies department, then it would make sense to try and link the two so that the students could understand how terrorist groups, for example, have raised funds or shift funds from one place to another. (A3)*

Therefore, while academic and practitioners agreed on the benefit of forensic accounting education to the students in their future work, they are cautious about the way that forensic accounting should be tailored and offered. Practitioners articulated a desire for a comprehensive forensic accounting curriculum that covers as many as possible of the forensic accounting topics in order to meet the market demand. However, academics demonstrated a

preference for a forensic accounting curriculum that is oriented to niche topics of forensic accounting.

Agent problem

In the interviews, it was noticed that the participants' epistemological beliefs influenced the development process of forensic accounting as a program of study. Evidence from the interviews showed that academics had tailored their courses in forensic accounting based on their forensic accounting experience or based on their educational background and cognitive ability. In this regard, differing epistemological beliefs led to divergent perspectives among practitioners and academics and between academics themselves in relation to curriculum development and design. Consequently, epistemological beliefs perform a constitutive role in how educators or (educational agents) have developed their courses.

> *For me, my background is in IT so I – my interest in how could you detect fraud by people is by the way they behave in the IT system (A1).*

Participants were also asked about their perceptions of the existing components of the forensic accounting curriculum. This was intended to identify how the epistemological beliefs of individuals shape their thinking toward education in this field. Participants' answers revealed inconsistencies about what they consider valid knowledge within the field. Answers encompassed a range of expectations, for example, "IT investigations" "expert witness" "assess the loss or damage" "managers' fraud". Academic views tended to reflect their areas of personal interest:

> *The broad approach that I prefer to take as a general rule of thumb is an articulation through a fraud investigation. And so that for me is the most interesting, the most relevant and the most powerful area within there. (A2)*

There is a large body of literature affiliated with how "epistemological beliefs" influence the comprehension and academic performance of students (Kresse 2008, 106), but little research has provided empirical evidence regarding educators' epistemological beliefs and how it may influence the shape of knowledge (Hofer & Pintrich 1997; Hofer 2001; Chan & Elliott 2004). This research has confirmed the views expressed in the forensic accounting literature about the diversity and complexity of forensic accountant work.

Practitioners also demonstrated the tendency to reflect their epistemological belief into the development of forensic accounting education. Similarly, they were implicitly aware of the role of epistemological beliefs and the related impact on the delivery of specialised forensic accounting knowledge:

> *A good university would bring someone in from the Information Technology Faculty to teach in this area (P1),*
>
> *Practitioners may be only an expert in one of them (P9).*

The diversity of forensic accounting practice and the lack of historical legacy in teaching forensic accounting allowed the agents' epistemological beliefs to influence the development process of forensic accounting as a program of study. In this regard, differing epistemological beliefs led to divergent perspectives among practitioners and academics in relation to curriculum development and design. Consequently, this has translated into differences in how educators "educational agents" have developed their forensic accounting courses. This may provide some justification to the divergence in views toward the forensic accounting education that Schommer and Walker (1995) have documented.

Social constraints

The analysis of information provided on universities' websites supported the claims of academics that university policies have an impact on the courses offered. Charles Sturt University program's handbook revealed that the university had prioritised fraud in the Master of Fraud and Financial Crime. This university focuses on research and education for professionals in law enforcement, investigations, and counter-terrorism. In contrast, the Queensland University of Technology which positions itself as an institution with a reputation for investing in cutting-edge technology, emphasises that the university imparts forensic accounting knowledge primarily in terms of IT forensics in the Graduate Certificate in Business (Forensic Accounting).

Another factor that has shaped the forensic accounting curriculum is that universities focus on professional and educational accreditations in order to attract students (Smith & Crumbley 2009). However, there is no Australian accreditation requirement for forensic accounting. Therefore, academics are not encouraged to integrate forensic accounting into their curricula in order to meet accreditation bodies requirements. This could be described as the 'discursive

gap' where social constraints and relation determine the process of shifting knowledge from the field of production to the field of education. The data from the interviews with academics suggests that pressure from accreditation bodies often motivates universities to implement programs and courses in order to legitimise their accounting program. One interviewed academic noted, 'we have to adhere to accreditation requirements' (A5). Another stated:

> *The professional accounting bodies have accreditation requirements. So, the accreditation requirements very specifically define what Bachelor of Commerce should have in it with an accounting major or a master in professional accounting should have, does not mention forensic accounting. […] but there is no accreditation requiring us to teach forensic accounting. (A1)*

Other factors

Ellington and Williams (2017, 451) suggested that 'regulative rules' may shape a university curriculum; these include "the university timetabling, calendar and venue arrangements". These regulative rules influence the curricula formation and are intrinsically related to the administrative work of the educational institutes. However, these institutional 'regulative rules' were "taken-for-granted" in this study and the interview data affirmed that these 'regulative rules' do not influence forensic accounting curricula formation. However, the interviewees identified other factors that shape the forensic accounting curriculum. The factors include students have a lack of knowledge about what forensic accounting entails and students find it difficult to imagine where they would work in this field. Therefore, potential students do not generally see any appeal to study this program. Academics also acknowledge that there limitations on future employment opportunities in this industry:

> *The industry is not very big as compared to the auditing industry in general, so I do not think you can have too many universities offering that (A6).*

From the institutional point of view, finding teaching time in the program was also acknowledged:

> *The problem we have in the undergraduates here is you have only got a limited amount of time* (A5).

An external factor mentioned was a lack of Australian based textbooks

> *The biggest challenge was a textbook that we have, is not in line with the Australian information and it is not purely used by us (A8).*

Prior research has acknowledged the lack of forensic accounting instructional material in general (Rezaee & Burton 1997; Rezaee et al. 2004; Luckett 2009; Seda & Kramer 2009). This is supported by the academics in this research who acknowledge the need to have an Australian textbook and suggest this absence hinders forensic accounting education. However, some participants suggested a solution to the textbook obstacle:

> *You can take an Albrecht textbook out and teach from it in Australia just have to make some modifications for local law and so on. So, we have to give – to pay attention to the legal framework of the country. And we can apply generic principles. (A1)*

Another academic sourced material from the internet and collaborated with industry in order to provide the students with valid examples.

> *There is a lack of textbooks, Australian textbooks on forensic accounting, so basically I had to do a search for my own resources, so that was a little bit challenging to begin with and had to learn a lot more about the industry then I knew at the time. But that was like 8 or 9 years ago, and so I think at this point in time there may be the resources I need, I had, and I rely on the industry a lot to assist in ensuring that I am relevant to the industry itself.* (A9)

In summary, other factors are related to the lack of student knowledge about what forensic accounting entails, students find it difficult to imagine where they would work in this field, finding teaching time in the program and a lack of Australian based textbooks.

Knowledge structure

Identifying the knowledge structure leads to identifying "the forms of acquisition for successful performances" (Kern & Weber 2016, 157). Thus, having identified the optimal form of acquisition leads to enhance the way which curricula must be structured. The findings from the research show that instead of developing a coherent structure for the forensic accounting curriculum, the field of forensic accounting has contributed an array of compilations that have led to variation, plurality and heterogeneity of content. This is consistent with findings of Bernstein (1999) and Fleming et al. (2008). A lack of coherent structure is sometimes considered to be an inevitable attribute for many of the sciences that are linked to the forensic realm (see for example Gaensslen 2003; Kranacher et al. 2008). This is because forensic work

is dependent on a wide range of competencies and knowledge. Some participants prioritised law and criminology; others have suggested fraud and cybercrimes and others have added business valuation and loss quantification.

To explore the possibility of embedding these topics in one coherently structured curriculum, participants were asked about their perceptions in regards to how these topics should be integrated and sequenced in forensic accounting education. These questions elicited discussions around why a course might or might not help students in another course and which course may be a prerequisite to another course. One practitioner illustrated how knowledge of court procedures and litigation must be considered as a capstone to forensic accounting education and how pre-requisite legal knowledge might be desirable:

> *If you are doing a major fraud investigation, or an economic loss thing that is a dispute between parties and it is a legal dispute, you need to know a whole lot more about the law to make sure that the report that you prepare is in accordance with the requirements of the court and will be admissible. (P1)*

Another practitioner grounded his 'business valuation' work on the application of finance theories and accounting knowledge:

> *It could be a valuation of a company, the valuation of shares. But it is really the application of finance theory. Finance and valuation theory. So, we do a lot of discounted cash flow analysis. (P4)*

These comments illustrate the diversity of knowledge that participants believed to provided a base for the various roles of forensic accountants. The literature around forensic accounting describes it as a discipline shaped from a range of miscellaneous disciplines encompassing law, criminology and accounting (Fradella et al. 2007; Heitger & Heitger 2008; Kresse 2008). Bernstein (1999) described this type of social science as a horizontal knowledge structured discipline. The data from interviews supports a horizontal knowledge structure for forensic accounting knowledge. To illustrate, the acquisition of business valuation knowledge by a practitioner or student has no consequences in the process of knowledge acquisition of fraud investigation; another example is that the acquisition of IT forensics knowledge has no consequences on the acquisition of dispute resolution knowledge. Given forensic accounting knowledge is segmented, diverse, and horizontally structured; it invites a series of 'teleological, epistemological, and ontological' positions. Furthermore, the horizontal structure of forensic

accounting was seen as highly segmented which was then reflected in the current curricula which lack coherence and cohesion.

Other curricular issues:

The theme includes three subthemes; the first is the ethics education, the second is the misconception: integration of IT forensics and business valuation, the third, is the integration of interdisciplinary knowledge.

Ethics education

Tiwari and Debnath (2017) suggested that the forensic accounting profession is at risk of conflating ethics with compliance with laws and codes of conduct, and noted that the reason for this misconception is due to the interdisciplinary nature of forensic accounting.

> *The complex, multi-disciplinary environment in which forensic accountants practise requires them to deal with ever-changing unstructured problems that are characterised by uncertainty of facts and outcomes. Forensic accountants also frequently operate in legal contexts in which they must possess a sound knowledge of laws, legal process and other rules and regulations. In addition to legal knowledge, forensic accountants are also expected to have strong technical skills in financial accounting, valuation and similar technical tools and processes. Howieson (2018, 163)*

However, in this study, some practitioners believe that the code of ethics is a very important consideration but it is not the only source that a practitioner would rely on to cover all ethical situations that they may encounter. For example:

> *We have an ethical code of conduct […] it is very important in this area (P7)*

Alternatively, some interviews with academics highlighted that they intend to address ethics from the perspective of compliance with laws and codes of conduct. One academic suggested,

> *I do not see there being any need for anything special beyond the general framework of ethics that should be applied (A1).*

The practitioner emphasise that exposing the students to APES 215[6] is important but not the only thing the practitioner would rely on to equip students with the ethical aspects and knowledge of forensic accounting work. In comparison, some forensic accounting educators rely only on the ethical code of conduct when they teach forensic accounting ethics to the students. This view was not the prevalent perspective among forensic accounting academics, some of them advocated for the necessity of exposing students to the relevant ethical principles in forensic accounting work. Howieson (2018) argued that these ethical dimensions of forensic accounting work include adopting a virtue ethics approach and that forensic accounting education programs should go beyond the teaching of laws, rules, and technique. A few academics did note the importance of exposing students to a broader range of ethical virtues than those covered by compliance laws and codes of conduct. These academics suggested using additional material to teach forensic accounting ethics and that these materials may include legal decisions, royal commissions, corruption enquiries, government hearings, news and similar media reports, documentaries. Interviewee (A9) highlighted this saying.

> *This is part of their learning, because ethics, and the issue of not doing the wrong thing and the whistle-blower program, all these things are part of their, part of the fraud unit. So, the ethical dilemma and the pressure that employers have, or the management have because of who commitied fraud are part of the discussion on a regular basis.*

The misconception: Integration of IT forensics and business valuation

As an interdisciplinary field, it was not surprising to find inequality between curricula components from different educational suppliers. The current curricula of forensic accounting have failed to fully incorporate the role of business valuation and IT forensics. This may be due to educators misunderstanding the role of forensic accountants in these areas. In the case of business valuation, data from the interviews suggested that educators do not perceive business valuation to be an essential teaching area. They believed that teaching this type of knowledge was the responsibility of another department such as finance:

> *Valuation can be done as part of finance* (A5).

[6] APES 215 is the Australian standard for forensic accountants' ethical considerations. Available here: http://www.apesb.org.au/uploads/standards/superseded_pronouncements/07042015033731_APES_215_Standard.pdf

In the case of IT forensics, some academics perceived it as an adjunct part and suggested that it be embedded within fraud units. One academic stated.

> *So on the IT side, one thing you need to be very careful about is providing them with an understanding of fraud-related activities, and the use of it might be used for computing (A5).*

For other academics, IT knowledge was essential to serve other kinds of forensic accounting duties, for example:

> *They need to understand how data is extremely important for business decision making as a starting point (A2).*

> *The link between accounting information systems and auditing and forensic accounting – you need to know what that link is (A1).*

Therefore, the lack of integration of essential knowledge areas was derived from the lack of agreement as to the degree to which these services may be required from forensic accountants and also reflected disagreement as to the responsibility of offering such knowledge.

Integration of interdisciplinary knowledge

According to Howieson (2018), the forensic accounting program of study should include psychology, sociology, criminology, and anthropology as a behavioural sciences components. The academics supported this idea of incorporating knowledge from broader disciplinary fields in the forensic accounting courses:

> *[…] forensic accounting crosses over a number of disciplines because you need the legal background, you need accounting knowledge, psychology helps because if you can understand the motivation behind the perpetrator* (A7).

Some academics propose that this type of knowledge should be encapsulated within core forensic knowledge courses as a module. One participant stated that psychology components would enhance student's comprehension of the behavioural origins of fraudulent behaviour:

> *Many people would never have thought of having a whole lecture in a forensic accounting course on these investigation methods. Right. Whereas that is a psychology course, isn't it? [But] would you have that in psychology?* (A1)

Another academic argued for the importance of integrating the interdisciplinary components of forensic accounting:

> *I draw students from law enforcement, national security, accounting, finance, business, a wide range of areas. Because, when you think about, when you think about the control of financial crime, a forensic accountant is just one role, they are just one person. Because, how much education, how much education and training does a financial accountant deliver? How often are they required to deliver cultural change within an organisation? How often are they required to, so there is, because the response to financial crime is not just an accounting response, holistic picture of response to financial crime has to bring in much more than just one discipline, it needs to bring in a wide variety. So, you need regulators, law enforcement, intelligence, security, data mining, computer sciences, a whole range of professions together help to tackle the problem that is a financial crime, which is endemic in our society. (A8).*

Thus, building an interdisciplinary curriculum is seen as advantageous as it provides the most comprehensive education for forensic accounting students. However, this raises concerns about obtaining qualified faculty to teach such courses.

Summary of findings

This study explored the factors that influence the process of transforming forensic accounting knowledge into the educational curriculum. The analysis of participant views and the variation that has been found in the current educational offerings of forensic accounting has revealed an epistemological uncertainty within the forensic accounting discipline. This uncertainty may be an obstacle that hinders progress in advancing forensic accounting education. The epistemological uncertainty has resulted in forensic accounting being relatively poorly defined as an academic discipline (Kresse 2008). As a result, it has led to inconsistency in the nature and purpose of forensic accounting as a tertiary subject. Further inconsistency has resulted from the diversity of forensic accounting subtopics and the bureaucratic system within which universities function. Both give academics the opportunity to reflect either their epistemological roots or their university philosophy. Consequently, this has created a discursive gap as described by (Bernstein 2000, 2003) between what is offered by the forensic accounting education curriculum and what is required within forensic accounting practice.

The findings also suggest that students have a lack of knowledge about what forensic accounting entails and students find it difficult to imagine where they would work in this field. There is concern about finding teaching time in the program and a lack of Australian based textbooks have resulted in forensic accounting programs of study being tailored to correspond with niche knowledge areas. In addition, because forensic accounting is a discipline with high social relation, this study has found that the lack of external accreditation requirements for accounting courses in Australia negatively affect the delivery of forensic accounting education and this creates a social constraint. The findings from this research support a horizontal knowledge structure for forensic accounting knowledge. The horizontal knowledge structure reflected in the current curricula has been demonstrated to lack coherence and cohesion

In addition, the findings highlight some curricular issues related to forensic accounting education. First, divergence in participants' perspectives toward the nature of ethics teaching. Some participants advocated that exposure to forensic accounting standards and ethical codes of conduct is sufficient whereas others thought it is essential to equip them with an extensive understanding of ethical principles. Second, some academics rebutted the importance of IT forensic and business valuation topics and argued that these areas were not relevant to forensic accounting education. The last issue was related to the integration of interdisciplinary knowledge, where academics supported the idea of embedding interdisciplinary knowledge in forensic accounting courses.

Implications

This study has investigated the reasons behind inconsistencies in forensic accounting education within Australia. It has particularly focused on the lack of coherence between knowledge required in practice and the education curriculum by eliciting the perceptions of both forensic accounting practitioners and educators. This study has enhanced the understanding of what influences the structure of the forensic accounting curriculum. In addition, it has helped to develop the theoretical lenses currently available in accounting higher education studies by borrowing a theoretical lens from the education field (Bernstein 1996, 1999, 2000; Botes & Saadeh 2018) and use it to interpret forensic accounting education research, and specifically within the forensic accounting discipline. This exploratory study was in response to scholarly calls for the advancement of empirical research in this area. Recent research on the reform of Australian higher education in the accounting field has made calls for curriculum reform

(Bernstein 2003; Kavanagh et al. 2010). Such reform will result in transformations in educational knowledge to serve the needs of stakeholders with different requirements and expectations.

This paper provides practical implications for accountants, accounting professional bodies, and academe. The paper seeks to illustrate to forensic accounting educators the factors that they might encounter when they design forensic accounting courses. Furthermore, educators can increase their understanding of the pedagogies which will enhance forensic accounting education. Thus, educators can ensure their curriculum design supports and develops the profession.

The findings provide constructive suggestions and guidance for educators, educational policymakers and university authorities on the factors and requirements to be considered in the formation of forensic accounting curricula. In terms of a practical solution to the forensic accounting curriculum dilemma faced by the universities, it seems there are at least two possibilities. The first possibility is to follow a regulative discourse[7] in formulating the curricula. This could be achieved by acknowledging the diversity in the forensic accounting field, and to discontinue general forensic accounting major and postgraduate programmes. Encouraging universities instead to teach their niche specialisations and engage in collaborative programs may be an effective way forward. The second possibility is to follow an instructional discourse[8] in formulating the general forensic accounting curricula. This would require substantial effort, as the instructors would need to incorporate a diverse range of knowledge and skills across the program. The program would need to provide the students with the opportunity to build knowledge of the fundamental roles of forensic accounting in the first level "semester or year" and then provide students with the capacity to choose from an array of elective courses which would allow the students to specialise in their chosen area of forensic accounting practice.

[7] The term regulative discourse refers to the rules generating the order within the instructional discourse—that is, the arbitrary internal order for the transmission of these competences (Singh, 2002, 576).

[8] The term instructional discourse refers to the syntax generating the 'trained capacities and lifestyles' (competences) to be distributed to the school population (Singh, 2002, 576).

Limitations and future research

The participants in this research were volunteers and were not compensated for participating. The fact that these participants chose to participate in the interview process may be driven because of their experiences or their interest in the research topic. Findings in qualitative research are not expected to be generalizable to a broader population. Instead, the study was designed to seek 'illumination, understanding, and extrapolation to similar situations' (Freeman 2010, 600). This research was limited to the Australian context and based on the perceptions of practitioners and academics. This was supplemented by data from forensic accounting education-related documents from universities websites. Future research could be conducted to investigate other stakeholder perceptions (accounting professional bodies, government agencies) using this research as a comparative base.

Final remarks

This research identifies the factors that shape and influence the forensic accounting curricula formation. There has been some consensus among researchers that the practical skills and knowledge required for forensic accounting practice are broad and varied (Golafshani 2003; DiGabriele 2008; Davis et al. 2010). However, as highlighted by this study, it is challenging to design a curriculum that appropriately and coherently combines all of the forensic accounting areas of knowledge. It is similarly challenging to find specialists and academics who possess sufficient expertise, skills and knowledge in forensic accounting areas.

Appendix A

The interviews guide (there are questions in the interview guide not used for the purposes of this paper)

Primary question	Motivation	Academies	• What motivates you to teach FA? from lecturer and college point of view
		Practitioners	• What motivates you to be a forensic accountant?
	FA education/ training	Academies	• Do you believe that FA education/training has an impact on the students in their future career? Why?
		Practitioners	• Did you receive any FA education/ training? If yes, Please tell me about your educational experience • Do you believe that FA education/training impact on the students in their future career? Why? Which is most beneficial to FA practitioner? • What is the type of education/training forensic accountant should have to distinguish himself from the ordinary accountant or auditor?
Curriculum components	Pre-requisite	Academies	• What are the (educational and professional –means experience-) requirements for a student to be able to enrol in a forensic accounting program of study? • What is the appropriate level to teach forensic accounting? • Do you know if there are any forensic accounting courses or education programs? • What are the entry requirements for a programme of forensic accounting education/ training?
		Practitioners	
		Academies	

	Professional Competencies	Practitioners	• What are the competencies that could be given to the students in the class? • How to equip the students with these competencies? • What do you expect from a graduated forensic accounting student?
	Topics	Academies	• What are the main topics to teach in forensic accounting courses? • Do you think that there is a difference in the ways of teaching these areas of forensic accounting? How? • In which sequence these topics should be provided?
		Practitioners	
	The ethics code of conduct	Academies	• How to teach the students about the ethical side of forensic accounting work?
		Practitioners	• Does the forensic accounting team member in this firm adhere to a specific ethical code of conduct? What is it? Could you tell me about it? Is this different from a normal accountant? How? • How to teach the students about the ethical code of conduct?
Sum up	Ending		• Would you like to add anything else?

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Chapter Five: Perceptions of the Usefulness of Various Teaching Methods in Forensic Accounting Education

Hashem Alshurafat, John Sands, Gregory Jones, and Claire Beattie, (2019)

School of Commerce, University of Southern Queensland, Toowoomba, Australia

This article has been submitted to a high ranked journal in the field of accounting education.

Statement of Contribution of Joint Authorship

Hashem Alshurafat (Candidate and Principal investigator of the manuscript)

John Sands (Principal Supervisor and Co-author of the manuscript)

Gregory Jones (Associate Supervisor and Co-author of the manuscript)

Claire Beattie (Associate Supervisor and Co-author of the manuscript

This chapter is an exact copy of the paper, which has been prepared and presented in correspondence to the Journal style.

Perceptions of the Usefulness of Various Teaching Methods in Forensic Accounting Education

Hashem Alshurafat, Claire Beattie, Gregory Jones, and John Sands

School of Commerce, University of Southern Queensland, Toowoomba, Australia

Abstract

The ever-increasing need for forensic accounting services in today's business environment has highlighted the need for accounting educators to consider integrating forensic accounting into their curriculum. This research has provided evidence about the current forensic accounting curricula, handbooks and syllabi and explored the pedagogical methods that Australian universities currently use in forensic accounting education. In addition, the perspectives of forensic accounting practitioners and academics were interviewed to further explore potential forensic accounting pedagogies. The theoretical framework used included experiential learning theory and the signature pedagogies theory. The case study yielded insights into the usefulness and effectiveness of various teaching methods in forensic accounting. As a result, the researchers have advocated the use of an experiential approach as a philosophy and signature for forensic accounting educational pedagogies. It is proposed that forensic accounting educators aspire to engaging students with experiential learning methods as this approach simulates real forensic accounting work in technical, theoretical and ethical dimensions.

Keywords: forensic accounting; pedagogies; signature pedagogies; experiential learning

Introduction

The forensic accounting specialisation has been dramatically growing across the globe (Botes & Saadeh, 2018; Howieson, 2018; Lawrence, 1998, 1999; Lima Rodrigues, Pinho, Bugarim, Craig, & Machado, 2018) and the resultant need for forensic accounting practitioners has been noted (Tiwari & Debnath, 2017). Thus, there has been an increasing call for accounting graduates to be educated in this discipline (Kleinman & Anandarajan, 2011; Rezaee, Lo, Ha, & Suen, 2016). However, educators face many challenges including how to prepare students for their future work (Souza, 2017). The objective of this paper is to explore the use of various pedagogical tools in forensic accounting classes and to develop recommendations for education in this field.

A number of researchers have highlighted the need for accounting graduates to possess forensic competencies (Hegazy, Sangster, & Kotb, 2017; Howieson, 2018; Jenkins, Negangard, & Oler, 2017; Rezaee et al., 2016). Recently, there have been calls from researchers, forensic accountants and the users of forensic accounting services, to expose students to learning experiences that replicate real-world forensic accounting situations (Davis, Farrell, & Ogilby, 2010; DiGabriele, 2008; Elder & Yebba, 2017; Kern & Weber, 2016). Commentators have suggested that the incorporation of experiential learning activities, which exceed the translation of theoretical knowledge, will enhance the practical knowledge of students (DiGabriele, 2012; DiGabriele & Lohrey, 2016; Jepperson, 2016; Laufer & Betzer, 2010; Lehmann & Heagy, 2017).

The Association of International Certified Professional Accountants, in 2015, developed a curriculum of forensic accounting aimed at equipping students with an understanding of the role that forensic accounting plays in the real world. In Australia, the professional accounting associations are directing attention at forensic accounting

specialisations. Both the CPA Australia and Chartered Accountants of Australia and New Zealand are coordinating discussion and special interest groups in this field. There is also evidence that forensic accounting education is increasing within Australian universities. For example, Macquarie University has entered into a collaboration with CA ANZ to administer a forensic accounting specialisation within their graduate diploma. A further 15 universities provide elements of forensic accounting education in some forms at various educational levels.

This exploratory research is important for three reasons. Firstly, a number of accounting bodies' worldwide have supported and advocated incorporating forensic accounting education within accounting degrees. These include the American Institute of Certified Public Accountants (AICPA), the Association to Advance Collegiate Schools of Business (AACSB), the Association of Certified Fraud Examiners (ACFE), and Australian associations such as the CPA Australia, the Institute of Public Accountants (IPA), and the Chartered Accountants Australia and New Zealand CA ANZ. Second, researchers have noted that while there is an increasing demand for forensic accounting skills within the job market (Hegazy et al., 2017; Van Akkeren, Buckby, & MacKenzie, 2013), there seems to be a lack of adequate forensic accounting education that matches graduates' competencies with the expectations of employers (Chen & Van Akkeren, 2012; Davis et al., 2010; DiGabriele, 2008; McMullen & Sanchez, 2010; Tiwari & Debnath, 2017). Third, there is a gap in accounting educational literature that focuses on forensic accounting pedagogical approaches (DiGabriele, 2012; Elder & Yebba, 2017; LaSalle, 2007; Lehmann, 2015; Rufus & Hahn, 2011).

This research has contributed to the literature in three ways. First, it has explored the current directions that Australian universities have taken in teaching forensic accounting to tertiary students. Second, practitioners and educators' perspectives were solicited regarding forensic accounting pedagogies and evidence has been provided on how these teaching tools

could facilitate students' future career. Third, some changes have been suggested, which may lead to improvements in forensic accounting education.

The paper commences with a discussion about the demand for forensic accounting education and introduces the pedagogical issues that this paper addresses, in the context of forensic accounting education. The second section identifies those prior studies, which have explored the role of experience in accounting education and the associated pedagogies. The third section discusses the theoretical approaches adopted for this research. The fourth section illustrates the methodological assumptions and outlined the processes by which data has been collected and analysed. The fifth section shows the study's findings. A discussion of the findings based on the underpinning theories and literature is presented in the sixth section. The conclusions limitations and future research guidance is presented in the final remarks section.

Literature review

The importance of experience in learning and experiential learning tools

For psychologists and cognitivists, the importance of experience stems from its role in the knowledge acquisition process. Dewey (1938) believed that learning is generated by interaction with the environment. According to Kolb (1984, 38) 'knowledge is created through the transformation of experience'. Murray Saunders and Machell (2000) emphasised the importance of aligning educational practice to real industry situations. Researchers have suggested that accounting students should be taught in a way that enhances their understanding of accounting practices and which simulates the future work environment (Beard, 1998; Bremser & White, 2000; Chaffey, Van Peursem, & Low, 2011; Coady, Byrne, & Casey, 2018; Groff, 1989; Riley & Ward, 2015; Wolk, Schmidt, & Sweeney, 1997). The importance of experience in learning has been derived from practitioner and employer demand for graduates with 'business awareness' and knowledge in terms of the real world (Kavanagh & Drennan,

2008).

Researchers have identified a broad set of teaching pedagogies which can be used to equip students with the required skills. For example, Hughes (2017) suggested that students benefit from using case writing to understand the application of the International Financial Reporting Standards, and their results have shown that students report positive effects from using case writing to develop their skills in a regulative area of accounting. Using interactive professional learning experience (IPLE) Sanchez, Agoglia, and Brown (2012) exposed their students to a realistic practice environment through inviting practitioners to supervise students in their assignment, which required them to evaluate the control environment and assess fraud risk. As a result, they emphasised the usefulness of interaction with practitioners and guest speakers as a pedagogy to enhance students' performance. In a similar study, Maletta, Anderson, and Angelini (1999) also advocated for the usefulness of direct work experience (mainly internships and cooperative educational experiences) as a pedagogy for improving the acquisition of taxation knowledge. Thus researchers in the accounting field have explored and examined various pedagogies and the experiential benefits associated with them (Mihret, Abayadeera, Watty, & McKay, 2017; Osgerby, 2013).

Teaching tools of forensic accounting

Throughout the past two decades, some teaching notes papers have examined the learning activities of forensic accounting (DiGabriele, 2012; Elder & Yebba, 2017; LaSalle, 2007; Lehmann, 2015; Rufus & Hahn, 2011). The adversarial and investigative nature of forensic accounting has led to the expectation that forensic accounting education will equip students with competencies that include the ability to investigate fraud, ability to provide expert witness in the court, judgment skills and a wide range of technological abilities and skills. Consequently, many studies have examined the effect of using teaching case studies related to

forensic accounting on the skills set of the students (Brickner, Mahoney, & Moore, 2010; DiGabriele & Lohrey, 2016; Mehta & Bhavani, 2017; Peterson & Gibson, 2003; Quirin & O'Bryan, 2015; Rufus & Hahn, 2011).

DiGabriele (2012) illustrated a teaching case study used in a forensic accounting course; the teaching note simulated the role of the forensic accountant in the valuation of lost profits due to business interruption. He argued that the case study assisted in exposing students to a set of important abilities such as unstructured problem solving, investigative flexibility, and deductive analysis. In addition, the student perspective of the role of case studies has been examined (Durtschi & Rufus, 2017; Laufer & Betzer, 2010; Lehmann & Heagy, 2017) and the results have indicated two benefits. Firstly, students appreciated the case's effectiveness in simulating the real-world application of forensic accounting role in valuation and adversarial litigation. Secondly, the students also appreciated the process of combining investigative accounting with the traditional skills of financial analysis.

Hypothetical problem-based learning cases have been flagged as a pedagogical approach appropriate for developing students' problem-solving abilities (Dee & Durtschi, 2010), and exposing students to a range of fraud topics (Peterson & Gibson, 2003). Rufus and Hahn (2011) designed a teaching note to provide students with an opportunity to apply fraud theory on an actual fraud occurrence. In this case, students are able to assess the three conditions generally present when fraud occurs, i.e., incentive, opportunity, and ability to rationalise. In some cases (Lehmann & Heagy, 2017) the ‘‘answer’’ to whether fraud has been committed was unknown. Thus, students are required to recognise and identify the red flags that would indicate the potential for fraudulent activity in an organisation.

Researchers have provided evidence of other learning activities that are used to simulate

forensic accounting practice. Small group discussions have been used as a pedagogical approach to enhance students' understanding of how and when fraud occurs (Lehmann, 2015). Other research has examined the use of guest speakers in forensic accounting classes (Laufer & Betzer, 2010). In this teaching activity, students have been exposed to expert witness real-world practice with the aim to develop their communication, analytical and critical thinking skills. Durtschi and Rufus (2017) provided students with an opportunity to work in a team as forensic accountants, who are hired by a client to resolve a dispute over an insurance claim. In this case, students were required to present evidence on the client's financial position, write an expert report, participate in a mock trial, present an opinion, and face cross-examination from an opposing team. Jones and Dosanjh-Zucker (2018) used novel stories to enhance students' understanding of the ethical dimension of forensic accounting and to develop students' professional writing skills. In this study, the authors reported positive perceptions from the students toward using reading material in enhancing their performance.

Kleinman and Anandarajan (2011) provided explanations of how video could be effectively used in forensic accounting courses to increase student awareness of how ''blind spots'' can negatively affect the investigation process. This view was supported by Gates, Lee, and Sullivan (2011) and Holtzblatt and Tschakert (2011) who argued that videos complement textbook and lecture coverage of various topics including ethics, accounting, and fraud. Others have argued that the ideal pedagogical design to achieve the learning objectives of legal and evidentiary practice is through role-playing (Jalilvand & Kostolansky, 2016). Students have usually shown a significant improvement in the development of forensic accounting skills and abilities if the undertaken forensic accounting course is supervised by a forensic accounting association (e.g. Certified Fraud Examiners) (Brickner et al., 2010; Kern & Weber, 2016).

Theoretical framing

The theoretical framework used in this study has drawn from the theory of experiential learning (Dewey, 1938; Kolb, 1984) and signature pedagogies (Shulman, 2005). The use of each theory has been illustrated in the next two subsections, followed by a subsection on the development of the research question.

Experiential learning

In education research, many studies have contributed to understanding the usefulness of different pedagogical approaches. Experiential learning approach has received significant attention from the researcher in the accounting field (Auyeung & Sands, 1996; Helliar, 2013). Kolb (1984) seminal work on experiential learning theory has influenced educators in the domain of fraud investigation. For instance, the results of LaSalle (2007) two quasi-experiments indicated that exposing students to an overview of the fraud triangle could, in some situations, lead to better risk assessments. Likewise, Elder and Yebba (2017) were able to assist students in understanding the fraud triangle elements –incentives, rationalisation, and opportunities– using a hypothetical or real-life case study. Yet others have used a real case study as a pedagogical approach for developing creative and critical thinking abilities by focusing on challenging assignments to avoid one-right-answer syndrome (Laufer & Betzer, 2010).

For A. Kolb and Kolb (2005, 193) 'experiential learning is above all a philosophy of education.' Since personal experience plays a significant role in determining the student's self-efficacy, the experiential learning approach tends to accommodate different learning styles (Sharma, Charity, Robson, & Lillystone, 2017). Hence, students gain valid forms of meta-cognitive abilities and become self-directed learners (Manolis, Burns, Assudani, & Chinta, 2013). Considering that professional expectations have raised the demand for accounting

graduates to gain specialised knowledge and skills related to forensic accounting, researchers have argued that educators have a responsibility to equip their students with work-relevant education and hands-on experience (Brickner et al., 2010; Fleming, Pearson, & Riley Jr, 2008; Kern & Weber, 2016; Souza, 2017). According to Jepperson (2016), experiential learning techniques serve forensic accounting students by simulating the role of fraud and forensic accounting concepts in real life situations and enable students to apply critical thinking to solve practical problems. Therefore, the theory of experiential learning has been used in this study to understand the purpose underlying the use of various teaching activities in forensic accounting courses within the Australian higher education context.

Signature pedagogies

Under the Carnegie Foundation's studies and through interviews and focus groups with academics and the analysis of various educational documents, Shulman (2005) has documented how teaching and learning occurred in various settings including, lawyers, engineers, clergy, nurses and physicians. As a result, Shulman has introduced the concept of signature pedagogies, which represent unique methods and modes of teaching students about a specific field of practice. According to Shulman (2005, 52) signature pedagogies:

> "are types of teaching that organize the fundamental ways in which future practitioners are educated for their new professions." [They] implicitly define what counts as knowledge in a field and how things become known. They define how knowledge is analysed, criticized, accepted, or discarded. They define the functions of expertise in a field, the locus of authority, and the privileges of rank and standing. (Shulman, 2005, p. 54)

The importance of the signature pedagogies exists by understanding the features of the educational practice and method that are required to prepare the student for their future career. According to Shulman, signature pedagogies are specific to each professional field and pervasive in the institutions associated with teaching that particular profession. Shulman noted

that the signature pedagogies are characterised by common features that are pervasive in a professional domain, habitual and routine-oriented and encourage pedagogical inertia.

Signature pedagogies bestow one of three temporal patterns - the pervasive initial pedagogy that shapes and indicates professional preparation, the pervasive capstone apprenticeships and the sequenced and balanced portfolios. Specifically, Shulman (2005) described the characteristics of signature pedagogies as; first, pedagogy that link the students with their future field of practice; second, pervasive across and among different institutions that are teaching the field of knowledge; third, simplify the complexity of the profession; fourth, entails students' performance in active and interactive ways; fifth, interesting because of their uncertainty and unpredictability; sixth, signature pedagogies seek balance between technical and ethical dimensions of practice.

According to Shulman, signature pedagogies symbolise the future practice, values and hopes of the professions. Further, Shulman argued that signature pedagogy could be used to enhance our understanding of the 'personalities, dispositions, and cultures' of the disciplines (Shulman, 2005, 53). Thus, the concept of signature pedagogies improves and sustains the pedagogical consistency of the educational programs of a profession within institutions. Moreover, signature pedagogies communicate and transfer the knowledge and ethical habits in a particular field. Consequently, it is crucial to acknowledge the signature pedagogies within a profession as this will lead to improvements in teaching and learning.

As shown in the literature review section, much of pedagogical tools are used by forensic accounting educators. However, no empirical evidence has been shown to understand what kind of these pedagogical tools is most relevant to forensic accounting. There is an imperative need to understand to which extent a pedagogical tool can reflect the culture, professionalism and day-to-day activates of forensic accounting. Therefore, this research

examines the signature pedagogy of forensic accounting among the available pedagogies based on the perspectives of forensic accounting practitioners and educators.

Research question

Based on the reviewed literature and the theoretical framework; the following research question has been developed.

R.Q.1. What are the features and the signature of forensic accounting pedagogies?

This question addresses a gap in the literature by seeking to understand the signature pedagogies of forensic accounting and to document the teaching methods that are currently adopted by Australia universities. This research has also explored the perceptions of professional stakeholders (academics and practitioners) about the importance, usefulness and impediments of adopting various teaching methods and pedagogies. While research of this nature has received some attention in the accounting and finance literature (Adams, Lea, & Harston, 1999; Apostolou, Dull, & Schleifer, 2013; Boyce, 1999; Milne & McConnell, 2001) there is limited research pertaining to the pedagogies of forensic accounting education (Carpenter, Durtschi, & Gaynor, 2011; Kleinman & Anandarajan, 2011; Rezaee & Burton, 1997; Smith & Crumbley, 2009; Young, 2008).

Research methodology

This research has subscribed to the notion that case studies are an appropriate tool to aid understanding of social phenomena (Stake, 1995). This study utilises a qualitative methodology because it has been considered proper for examinations of individuals' perceptions, and experiences (Silverman, 2015) among the qualitative research methods, the use of case study method has been debated to be helpful for explorative studies (Yin, 1994). Therefore this research has adopted multiple case studies as the research design (Yin, 1981).

The research explored two stakeholder groups; the first group consisted of forensic accounting practitioners; the second one was forensic accounting educators. In addition, this research explored data contained in educational forensic accounting documents. The two methods used were semi-structured interviews and document analysis. The data from these methods were triangulated and analysed based on the theoretical foundation of experiential learning theory and the signature pedagogies lens.

Ethical consideration

Ethical clearance for the research was obtained from the researchers' university. A key ethical concern was ensuring the anonymity of the participants, whose involvement was voluntary. All names of the interviewees and their identities have been de-identified to maintain confidentiality. The participants each signed a letter of consent and read the participant information sheet, which explained the aim of the research and their role in it.

Participants and data collection

The first step before data collection encompasses conducting a pilot study to ensure the suitability of the interviews questions. Two interviews have been done with academics to test whether the interviews questions are clear to be understood and valid to answer the research question. Therefore, the interviews questions (see Appendix A) have been adjusted according to the comments from the two academics in the pilot study stage. The interview process with the practitioners' group has been conducted over during July 2017 and September 2017. Besides, the interviewing process with the academics group has been conducted during November 2017 and January 2018. In the data collection stage, data were gathered through two phases. In the first phase, data were collected from forensic accounting curricula handbooks and syllabi (Bowen, 2009; Flint et al., 2012). This data set provided a mechanism to ascertain

the current pedagogies used for forensic accounting education. Data were analysed from 15 Australian universities, which teach forensic accounting, either as stand-alone courses or as a whole degree or program. These stand-alone courses and degrees provide 43 educational documents distributed between curricula handbooks and syllabi.

In the second phase, the data were collected from 18 interviews with the two groups of participants, practitioners and educators, with nine interviews from each group. This research has used purposive and snowballing approaches to sampling (Silverman, 2015). In the academic group, interviews were done with staff who have experience in teaching forensic accounting. Six of these participants have developed a forensic accounting degree and units in their universities. The academics are from nine different universities. The second group of participants involves forensic accounting practitioners; these interviewees were located in seven different Australian forensic accounting firms based in Australian cities. Their experience in forensic accounting ranged from 13 years to 45 years, with an average of 25 years.

The first author conducted all the interviews with the participants (Gaskell, 2000). Each interview lasted between 30 minutes and 60 minutes. All interviews were recorded by the interviewer and then were transcribed by a professional transcriber. During the interviews, the interviewer also took notes in order to ensure accuracy and completeness. The interviewees each received a copy of the interview script prior to the interviews. Therefore, they were informed of the research purpose and the interview questions, and they were able to develop their thoughts, thus improving the credibility of the interview and the validity of their responses (Mark Saunders, Lewis, & Thornhill, 2009).

Interview protocol

The protocol for the interviews included three stages, planning, introduction and establishing rapport and neutrality (Gaskell, 2000). In the planning stage, the researchers defined the required information regarding the research problem using the existing forensic accounting literature. In the second stage, before starting the interview session, all participants were given an opportunity to review and ask questions regarding the informed consent form and participant information sheet. This was completed by the participants and collected before the interview commenced. In the third stage, to establish rapport and neutrality, the researchers introduced himself to the participants and presented a brief elaboration of the primary purpose and scope of the research.

Data analysis

The data from the document analysis and interviews were triangulated and analysed using thematic analysis facilitated by the use of NVIVO 11 software. Thematic analysis is a technique used to interpret qualitative data; this research followed the guidelines of Braun and Clarke (2006). This research summarised the data from documents and recorded interviews. An initial summary of the data was performed in order to capture the full sense of the data and to become familiar with its contents. The next step included generating a set of first-order codes to capture the interesting features of the data; this was done in accordance with the Saldaña (2015) guidelines. In the third stage, the potential themes were searched for by collating the codes into similar categories.

The fourth step in the analysis process encompassed checking the potential themes. This step served as a filter and organiser, where coded data were checked against the themes to attest to their relevance. In this step, themes were collapsed where they were similar in their contexts and some were deconstructed to create two themes where they indicated separate

ideas. In the penultimate step, the overall story of the data build, named, sorted and arranged into the main subthemes and themes of this study. The findings report was written in the final step. In addition, the last step included the final analysis of selected extracts, relating findings to the research question and prior literature and selecting vivid quotations.

Other methodological issues

Internal and external validity and the trustworthiness of the research

Pratt (2009) argued that in qualitative research there is no 'boilerplate', of analysis, a 'significance level' of results or a 'magic number' of participants. Trustworthiness should be carefully considered when dealing with qualitative data and this concept may include credibility, dependability, and transferability (Guba & Lincoln, 1981). Another important concern in qualitative research is the rigour of the research to maintain and ensure internal validity, reliability, and external (Golafshani, 2003; Healy & Perry, 2000). In an attempt to achieve these criteria (trustworthiness and rigour) in this research, attention was paid to the following steps. Firstly, consistency of the findings maintained with reality (the relative trueness) (Maxwell, 1992; Merriam, 1995). Second, the data were interpreted through the theoretical lenses of experiential learning theory and signature pedagogies. Third, the data were triangulated from two different sources.

The researchers scrutinised the 'construct validity', 'internal validity' 'external validity' during all research phases (Rao & Perry, 2003, 2007). Construct validity of the research has been achieved through well-written interview questions, which assured researchers of the validity of the questions to obtain relevant data. Each interview included probing questions to elicit additional understanding. Internal validity in this research has been obtained through purposeful sample selection on the basis of information richness (Rao & Perry, 2003). In this research, external validity was achieved by selecting two groups of

participants in the interview process to ensure a cross-section of opinion was provided.

Findings

The findings have been reported under the following four themes:

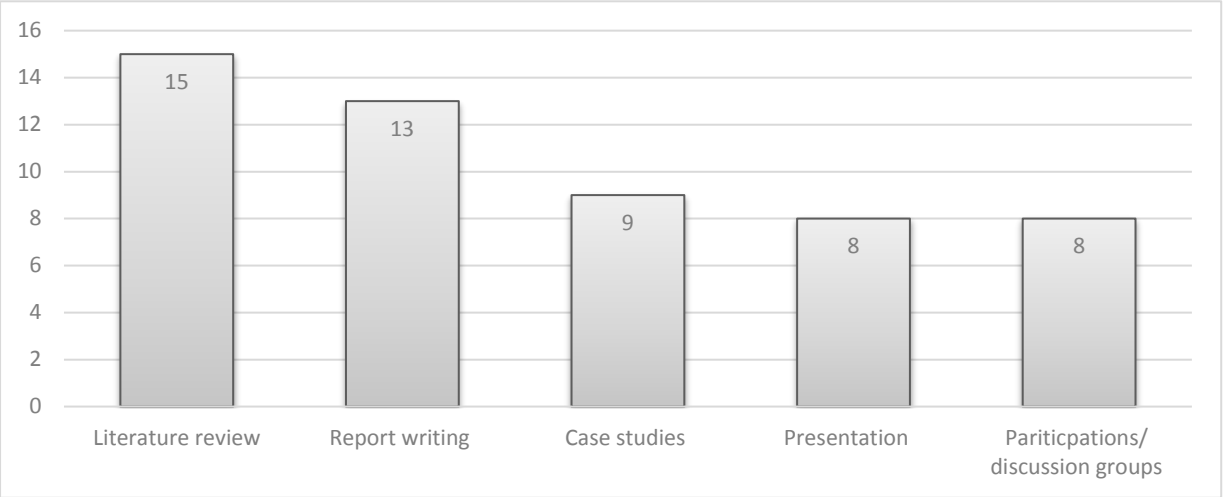
- First theme: learning activities and experiential learning
- Second theme: hands-on forensic accounting experience
- Third theme: pedagogical tools
- Fourth theme: a traditional learning approach

The first theme reported the findings from documents data while the last three themes reported the findings from the interviews. The themes have been emerged naturally from the documents and interviews data and then have been interpreted through the theoretical framework. These themes have been exemplified by direct quotes from the data and elaborated in the following sections.

First theme: learning activities and experiential learning

Varieties of tools have been used in the existing forensic accounting courses as shown in Figure 1. Many courses have utilised traditional learning mechanisms to deliver forensic accounting education. These have included literature reviews, presentations and discussions, which are delivered to give the students the opportunity to gain a theoretical understanding of forensic accounting work. However, some courses provided experiential learning consisting of report writing and/or case studies.

Figure 1: teaching tools



In the report writing pedagogy students were required to develop a written project, which encompassed a topic-related essay, research project, investigation report, a literature review, or use articles to generate a theoretical explanation. The purpose of this was to allow the students to use research skills, communication skills, creative questioning, problem finding and problem-solving to create new knowledge that could be applied to real cases, or contribute to the field of forensic accounting to improve the profession. Macquarie University's website provided the following information about the content in course specification ACCG878 – Fraud Detection, Investigative Techniques, which should be a direct reflection on what they are offering.

> Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society.

Case studies and real-life scenarios were also used to simulate forensic accounting work; there explored different areas such as fraud examination, evidence, report writing, problem-solving, and the expert witness role. Implementations of case studies were able to be in various forms; for example, one collaborative case study could be undertaken in groups of

three students and covered the types of digital evidence used in the fraud investigation. As case studies simulate real forensic accounting work, this approach argued that students would be equipped with various competencies and knowledge. The University of Wollongong website provided the following information about the content in course specification ACCY954– Advanced Investigative Techniques.

> Case studies and practical examples will be used to demonstrate the application of the IPEC model to a structured forensic accounting investigation that will serve as the basis for an independent expert report.

Similarly, the University of Melbourne website provided the following information about the content in course specification ACCT90026-Forensic Business Processes.

> Explain and apply fraud detection mechanisms; and apply the knowledge gained throughout this subject to analyse case studies and produce practical and effective recommendations for the conduct of investigative cases in business forensics

In many courses the examination was not the primary assessment tool; students' performance in the courses was assessed using many forms of formative and summative assessment including, tests and assignments, presentations and participation/discussions. These assessment tools were designed to assess students' comprehension of the course material and students' abilities and skills. Overall, exams were used to test the students' ability to respond to forensic accounting issues through a written response, which corresponded with the aim of enhancing the students' communication skills. The end of semester examination was designed as a hurdle to test theory and practical understanding which potentially covered the whole curriculum. Report writing is considered as an experiential learning tool because it is one of the main tasks of forensic accounting practitioner. Business Investigation – (ACCT2211) offered by RMIT University, on its website clarified this in the course specification:

> This assessment may take the form of tests and a major assignment, designed to test your understanding of the course material and your research, analytical and written skills. An end of semester exam will test the your ability to understand course material and your ability to analyze, interpret and respond to forensic accounting issues, demonstrating logic/reasoning through your written responses

Second theme: hands-on forensic accounting experience

This theme emerged based on the practitioners' and academics' belief that the most useful training and education could be done once students have some experience. This enabled triangulation of theoretical knowledge with real-life situations. This theme was based on two subthemes; experience and collaboration.

Experience

From the interview data, the academics acknowledged that simulation of real forensic accounting work in the classrooms enhances students' ability to understand the forensic accounting knowledge and improves students' employability. Notably, practitioners stated that they look for evidence of experience or simulated experience in the students' education. However, practitioners perceived forensic accounting topics as very difficult to be taught in a classroom by itself, a practitioner commented *[…] it is not something you can learn from a textbook (P9).* Another practitioner said that universities would not be able to provide what learning on the job could provide. However, some of these hands-on experience, such as those identified by Howieson, Hancock, Segal, Kavanagh, Tempone and Kent (2014), have been may already be taught to general accounting degree programs, which may be considered for application to a more specific forensic accounting topics. However, the discussion on such similarities is outside the scope of this study.

.Employers were not satisfied with the theoretical knowledge that students may possess and they sought a more applied education based on real forensic accounting experience.

> Well, I do not think an academic institution can equip someone to handle fraud investigation. They can teach them many of the aspects that they need to know, but in the end, it is about interviewing and investigating people. (P2)

However, some academics noted that the university duty was to provide students with the fundamental and theoretical knowledge, and then work experience will triangulate this knowledge with professional activity. One academic believed that the mission of the universities was to enhance student knowledge, skills and abilities but not to equip them with the experience that they would need in their future work life. This was because the nature of forensic accounting was too broad to be covered in one program of study. These participants emphasised the role of the university in developing student's thinking and analytical skills.

> At the university, our purpose is to create individuals who are perfectly ready for every single type of job. We want to create individuals who can critically think. If they can critically think, they can adapt and understand circumstances very quickly. (A5)
> They did not get that skill set at a university; they got it on the job. And so what happens is, with the gist of hindsight things become much more simplified. (A5)

From the interviews, when questioned about the types and nature of the experience that the students need to have, the practitioners' responses were broad, and they listed activities such as 'investigative' 'interviewing' 'mock court' 'moot court' 'students to visit the real courts'. There was a clear consensus among the practitioners about the necessity of real-world experience and a number of comments reflected terms such as ''interactive' 'training' 'active learning' 'real world and real life' 'practical experience and practical examples' 'learning by experience' 'mimicking the work of the profession' 'exposure'.

A practitioner exemplified the problem for current forensic accounting graduates as someone has a 'medical degree and he never has done medical operation' (P3). As claimed by the majority of practitioners, the problem exists because traditional teaching tools do not adequately compensate for the lack of real-life components. To overcome this issue, academics

have attempted to incorporate practical pedagogical approaches to mimic the hands-on experience that supported the theoretical components of what students have learnt. One of the academics built case studies based on news related to forensic accounting and he/she believed that pedagogical tool would equip students with a simulation of hands-on experience.

Practitioners also emphasised that forensic accounting encompasses a set of foundational concepts that are then able to be applied to sub forensic accounting topics. To illustrate, one practitioner stated that the concept of evidence would include how to collect, analyse and present evidence both in a written and in an oral statement. This concept of evidence is the same whether the topic is fraud, litigation or a family law dispute. A practitioner provided a sequential way to triangulate theoretical knowledge with experiential knowledge.

> There are some components of it, like the legislation, you might have a module that is on the law, but I think when it comes to investigative skills, and learning those, I mean, you're either going to do those on the job, or if you are going to do classroom-based learning it's got to be sort of interactive. Which sort of goes back to my policing days, so all the training I did, investigative training, interview training, a chunk of it was interactive. (P9)

In summary, academics and practitioners agreed on the usefulness of experiential learning as a valid base to convey forensic accounting knowledge through appropriate pedagogical tools. However, practitioners believed that on the job training was the optimal way to comprehend forensic accounting knowledge. In addition, academics perceived their role as a forensic accounting educator was to guide students to comprehend the fundamental knowledge of forensic accounting work. Moreover, both academics and practitioners believed that strong industry involvement in forensic accounting education should be reflected in the design of the course and the selection of pedagogical approaches to provide students with hands-on forensic accounting experience.

Collaboration

Hands-on experience can be facilitated through collaboration with the forensic accounting industry and providing opportunities to incorporate professional activities within the teaching methods. When practitioners were asked about the benefit of collaboration between educational institutions and the industry, they provided positive feedback. Interestingly, there was a general agreement that collaboration between universities and industry yields a wide range of benefits for many stakeholders including students, practitioners and the universities. In the case of students, they will hone the general skills necessary to become effective forensic accounting practitioners and they will have opportunities to enhance their professional network. Practitioners benefit from having students working collaboratively with them and this may lead to positive hiring outcomes. The practitioners argued it would be most useful for universities to collaborate with employer organisations rather than accounting bodies because the industry would provide the educators with the understanding of the appropriate forensic accounting experience to be incorporated in the curricula.

> They should really do what I have done and that is to make sure you've got very strong industry involvement. (A2)
>
> What I do like about the way we have structured our course here at […] is there is a lot of practitioners involved so they are, we are sharing what is the latest practice. (A6)
>
> The employer gets the benefit of the student coming to work for them in a more cooperative way. (P5)
>
> I need to see them live in the work environment to be able to determine whether they are going to have the right mindset and the right attitude. (P5)

However it was clear from the universities' websites, that currently the focus is on collaboration with accounting bodies more than with the employers of forensic accounting students, this focus is because the accounting bodies provide legitimacy for universities in terms of accreditation to the university curricula components. Macquarie University and

Charles Sturt University websites show examples of this focus. From interviews with academics of forensic accounting, it was found that many universities neglected collaboration with the forensic accounting industry. However, some of the academics showed an awareness of the importance of working with industry participants. Some participants also commented on the impediments to collaborate with either the forensic accounting profession or the accounting bodies.

A number of academics noted that collaborative opportunities were limited due to a lack of willingness from practitioners in the industry. Since the industry is relatively small, finding a forensic accounting organisation open to collaboration was challenging. Thus, some academics tended to tailor their courses according to ACFE requirements in order to grant their students an international perspective of forensic accounting and foster students' eligibility to work in international contexts.

> It is very difficult to find someone in the industry, who would be willing to collaborate. (A8)

Third theme: the pedagogical tools

Practitioners emphasised the need to develop teaching tools in a way that replicates the actual practice of forensic accounting work. Practitioners noted that forensic accounting is a 'team sport' so they anticipated forensic accounting education would foster the students' teamwork ability. Thus, many of the learning activities mentioned by practitioners contain experiential learning features such as 'group work' 'role-play exercises' and 'videos'. Accordingly, this section shows which pedagogical tools are recommended by the study's participants. Therefore, this section is deemed an important contribution to our knowledge in term of forensic accounting teaching tools.

Case studies to simulate real life

Some practitioners noted that they provided training sessions to the new forensic accountants in their firms. They emphasised that this training relied on case studies to convey information about forensic accounting practice.

> I think case studies are really useful. Interviewing techniques, some examples are hard to convey without case studies. (P2)

According to the practitioners, case studies were an effective pedagogical tool to illustrate forensic accounting practice which could not be demonstrated effectively by using textbooks. Further, the types of skills that employers required from the new hires in forensic accounting were very technical. This elevated the importance of case studies because the educator would be able to simulate the real-life situation and develop these skills in the classroom.

> I think it should be real-life cases with anonymised information but real problems. You actually give the students a set of documents that are real or anonymised real documents and let them find the fraud and write a report. And they are the skills I would – give them a real – it cannot just be theory or textbook. (P3)

Academics also attested to the importance of case studies and noted that this pedagogical approach gave the students the ability to experience the particular area that they want to specialise in as a forensic accounting practitioner: 'It could be anything that they are interested in' (A5). For another academic, case studies were aimed at developing certain skills in the students. Some academics were actively collaborating with practitioners in developing case studies: 'they write the case and pass it to us and we use it for the group assignment' (A6). Other academics stated that they used case studies to overcome the lack of Australian based textbooks. One of the academic participants considered that the use of case studies was an authentic assessment tool. Most academics expressed general agreement that case studies were

useful after a theoretical explanation of the subject.

> Something that I use in my classes is pulling newspaper articles on a particular topic, so I will make those available, there is some discussion that's going on. (A7)
> You know, the inquisitive nature, the attention to detail that kind of investigative skill set. You can't really, I don't think, teach that in a classroom. You have to be presented with a problem that they can find a solution to. (P5)
> I think you have to do a combination of theoretical concepts and then follow them up with case studies so I talk a lot about data and then move on to business intelligence and how data is used in business intelligence and then when we, when we all can talk about in terms of how you can use accounting data for a forensic investigation and then from that point forward, we move to a case where that actually are given data and have to investigate it as a potential fraud case and prepare an expert report. (A2)

In relation to the ethical components of forensic accounting practice and education, practitioners acknowledged the usefulness of case studies.

> Well, look, I think you could just present a series of case studies on that. I mean, ethics really comes from the heart, doesn't it? You're talking about teaching people who are probably in their late twenties or something and by that stage they should have developed some sort of ethics, I think. But you can certainly, I think, put forward a series of case studies rather than doing it by simply laying out some rules. You know, case studies saying, Well, you're in this situation, you know, what are you going to do? (P7)

Academics also showed awareness of the importance of exposing students to ethical situations and incorporate 'some key things like conflict of interest' (A6). Some academics also required students to understand the role of professional codes of conduct.

> You can also educate them regarding the codes of ethics or standards required in any of the professional disciplines. (A3)

Various pedagogical issues

In addition to case studies, academics recommended various kinds of teaching tools. These included activities such as 'report writing,' 'essay,' 'video,' 'guest speakers,'

‘teamwork,’ ‘participation,’ ‘presentations,’ ‘mock trial,’ ‘software,’ ‘group discussion,’ ‘blending learning,’ and ‘authentic learning,’. The academics provided rationales and justifications for the use of each kind of these pedagogical tools in forensic accounting classes. Some participants endorsed the need for report writing by noting the vital role that a forensic accountant plays in court as an expert witness, which often required written communication to be provided to jurors and judges via a written report. Many practitioners supported this view and reinforced the importance of being able to write a coherent and concise expert report.

Noting that lectures were sometimes affected by tedious repetition and routine nature, one academic advocated using videos in the lectures ‘to break the monotony’ (A8). However, some academics said that they relied on using the video when they are not able to provide a case study of a subject matter, while another stated that they use videos before commencing any case study to give their students an introduction to what they are going to learn. Academics and practitioners agreed that inviting guest speakers to the classroom also provided students with insights to forensic accounting practice. This was enhanced when practitioners gave students specific examples of forensic accounting engagements from their own experience. A number of academics commented that they relied on guest speakers: ‘We commonly have speakers come in’ (A5). Guest speakers who were recruited by the academics included ‘practitioners,’ ‘law enforcement officers,’ ‘police officers,’ ‘barristers,’ ‘judge,’ and ‘legal counsel,’. One academic narrated another use of guest speakers.

> Many convicted felons try to demonstrate they are reformed by giving interviews about their crimes, why they committed them and how. Their stated aim is often to educate organisations and investigators to identify weaknesses in governance systems, what motivates a person to engage in dysfunctional behaviour, methods used to steal or defraud, manipulate information, etc. (A9)

Similarly, practitioners recommended the use of guest speakers in forensic accounting

classes.

> I would suggest you [to] get real practitioners to read those conversations because it is a practical question, it is not an academic question. There is some frameworks about how you assess the loss of damage, there is some law cases on those things. But a lot of this is dealing with an imperfect world and it is also about the imperfect world that you live in, it is about incomplete data. So, you need to [bring] practitioners in.(P6)

In regards to teamwork and collaborative work, academics are conscious of the relevance of these skills to the nature of forensic accounting work. Most forensic accountants do not work as individuals in their companies so academics attempted to expose students to the interactive and participative nature of learning. Some academics asked their students to do presentations in order to develop their interviewing abilities and prepare them to be able to stand at the courts.

> Group discussions, presentations and debates are aimed at facilitating the development of teamwork and communication skills. Forensic accounting engagements often require team efforts. Topics are selected requiring independent research by group members, discussing ideas and identifying differences in perceptions, collating research and incorporating it into a report, presentation, arguments for debate, etc. (A9)
>
> Another key aspect here is that forensic accounting is a team sport. Although giving evidence is not a team sport. But at the – being in the witness box is not a team sport. But all of the preparation before that is a team exercise. So, having people working in teams, brainstorming how they would deal with a problem is a very useful way of doing it. (P6)

Most academics and practitioners emphasised the role of the forensic accountant in court. They expressed an appreciation for exposing students to mock trials to simulate this area of forensic accounting. Moreover, academics commented that they used mock trials to allow students to simulate other forensic accounting areas such as ‘interviews’ ‘evidence gathering’ ‘fraud investigations’ ‘compliance with governance systems’ ‘relationships between employees and management’ ‘forensic accountants characteristics’. In applying the mock

trails, academics said that they collaborated with law faculties, where the forensic accounting students were given a scenario and relevant information, to serve as the basis of an expert witness report.

> and moot courts using evidence students from the faculty of law and forensic accounting students as expert witnesses. (A9)
> Part of the thing that I did was I did a number of subjects which were in the law school, and part of those things was actually standing up in a mock courtroom and being cross-examined by law students. You get that experience, cannot get that anywhere else other than doing it.' (P1)

In relation to the technological part of forensic accounting work, academics emphasised that data processing techniques were an essential part of most forensic accounting engagements.

> […] they, therefore, need the skills to learn the practice skills, in using software. So our students use quite advanced software, they learn how to use quite advanced software in thier analysis of data. That is for structured data, and for unstructured data they need to know, they need to learn how to analyse unstructured data such as social media data, email data, etc. (A2)

Overall, many academics tended to blend the available teaching activities in order to apply theoretical issues discussed in their lectures and to allow students to simulate the forensic accounting in a practical context.

> I think you have to do a combination of theoretical concepts and then follow them up with case studies so I talk a lot about data and then move on to business intelligence and how data is used in business intelligence and then when we, when we all can talk about in terms of how you can use accounting data for a forensic investigation. (A2)

Interactive learning

Academics strongly recommended the active learning approach for forensic accounting

classes.

> I think, what is far more effective is where students co-create their own knowledge and if you can break that down into a smaller classroom situation then it lends itself much more to a more interactive teaching method. (A7)

The interactive learning is associated with many advantages for students. These advantages include increasing students' engagement and enhancing their performance. In the interactive learning approach, students are required to communicate in the class, provide the response and ask questions. Therefore, it was not surprising that many participants endorsed these kinds of activities since they were advantageous in many disciplines.

> So, you know, that is always preferable whether it is forensic accounting or not. (A7)

Fourth theme: traditional learning approach

This theme reveals the distinction between using the traditional learning approach and using the experiential learning approach in teaching forensic accounting. In particular, this theme shows how and why academics teaching forensic accounting use a traditional learning approach. It was evident that this approach was adopted to teach the definitions and descriptions of terminology, the fundamental bases of laws and regulations and the theoretical base of fraud. In addition, traditional learning theme provides a cost-effectiveness justification for using experiential learning approach. Academics asserted that lectures were a cost-effective means of providing material to a large number of students. According to one academic, the traditional learning approach provided an explanation and overview of a topic and included introductory material such as definitions and descriptions of terminology (e.g. what is fraud; embezzlement; Ponzi schemes; and shadow expert witness). Thus, it was necessary to consider the university cost model. Nevertheless, from a student perspective, they favoured a small classroom environment employing interactive teaching methods.

Discussion

This paper is one of the few studies in forensic accounting education that has explored the signature pedagogies of forensic accounting education. This research has explored the use of pedagogies in the current forensic accounting stand-alone courses and program of studies among Australian universities. In addition, the signature pedagogies for forensic accounting were categorised by identifying the teaching tools that best served the intrinsic nature of forensic accounting profession based on a constructive examination of the forensic accounting academics and practitioners perceptions.

Forensic accounting education has many facets. First, it provides a means for is not an education for understanding. Second, it permits the preparation of a capable forensic accountant to accomplish the main forensic accounting service, which is its primary goal. Third, forensic accounting education faces a unique challenge because the pedagogies must cover not only the technical and real works of forensic accounting but also the theoretical aspect and the particular application of the forensic accounting practice. The case study is considered the pedagogical signature because it has the abilities needed so that a case study can be sued to teach the forensic accounting students about how personalities, dispositions, and cultures work for forensic accounting.

It was found that the courses and program of forensic accounting lack comprehensive integration of the experiential learning method. Real life cases, hypothetical cases, and mock trial are forms of teaching that correspond with experiential learning premise and the nature of forensic accounting work (Jepperson, 2016; Marychurch, 2006). Students are empowered by

investigating real and hypothetical fraud cases, acting as an expert witness and participating in mock trials. The findings from this research have suggested that accounting faculty should consider incorporating experiential learning techniques in courses in order to improve students' forensics competencies and more fully prepare students for their future careers in forensic accounting.

Rather than passively learning by reading, thinking, or viewing information about something, experiential learning yields various active learning techniques that allow an individual to learn by actually doing something (D. Kolb, 2015). This paper suggests that forensic accounting students will enhance their learning by experiencing this approach to learning. The findings showed general consensuses among practitioners toward the necessity of hands-on experience as a signature pedagogy of forensic accounting. However, from the academics' perspective, they were not similarly united in their selection of pedagogies. This difference in academic opinion stemmed from their attitude towards their role in forensic accounting classrooms. Some participants expressed the opinion that their role was to equip students with the theoretical and fundamental aspect of forensic accounting. Conversely, another group -which was the majority- endorsed the necessity of hands-on experience. This divergence among academics was reflected in the analysis of the forensic accounting curricula, where there was a diversity among the pedagogies used.

The findings also indicated that hands-on experience would be more pervasive in forensic accounting education through collaborative efforts between industry and educators. However, there are barriers to this process and the findings suggested that practitioners are more willing to accept the idea more than the academics. However, academics rationalised this by relating the obstacles that they have experienced by prior attempts to collaborate. These obstacles were connected to accreditation requirements and the small size of the forensic

accounting industry. This limited opportunities to expand networks and for academics it was not easy to find practitioners willing to collaborate. There are few suggestions provided to overcome the obstacles that forensic accounting educators face. First, increase the level of networking with practitioners in forensic accounting industry. This networking may be achieved through inviting them to join the university's forensic accounting classes or workshops as guest speakers. Second, educators may tailor their forensic accounting case studies and textbooks accordingly with real-life scenarios from the Australian context. Third, effectively collaboration with the existing accounting bodies to set out accredited forensic accounting programs of study. The negative side of applying experiential learning tools is the high cost of implications of such pedagogies. When considering the cost of the three suggestions, it appears that the first and the second suggestions are the most cost-effective solutions and the last solution is very costly to be achieved.

This paper has advocated for experiential learning as a philosophy to teach forensic accounting. Various kinds of teaching methods can be applied to achieve real work scenarios and hands-on experiences. The most pervasive teaching method is a case study and these provide opportunities for illustrating the ethical dimension in forensic accounting work as well. Participants also acknowledged the usefulness of using various teaching methods including, guest speakers, videos, mock trial, report writing, presentations, software and group discussions. Each teaching method serves to achieve different educational purposes in teaching forensic accounting students. Therefore, we suggest using blended teaching pedagogies with an emphasis on using case studies. Both academics and practitioners suggested abandoning the traditional way of teaching, which is based on lectures and theoretical explanation. However, there are a few ways to benefit from the traditional way of teaching, which include the illustration of fundamental concepts and preparation for the case studies or other pedagogy. In this regard these findings are consistent with the conclusions of Mvududu and Kanyongo

(2011); O'Leary and Stewart (2013); Durtschi and Rufus (2017); Lehmann (2015); (DiGabriele, 2012) and (Jepperson, 2016) on the efficacy of cases studies and other interactive teaching methods as pedagogies to simulate real work scenarios and achieve experiential learning.

From the theoretical interpretation, it was found that case studies as a signature pedagogy fulfilled the main characteristics of signature pedagogies as noted by (Shulman, 2005). Case studies as a pedagogy serve to link the students with their future field of practice by exposing them to real scenarios of forensic accounting practice. Case studies were evident in current forensic accounting educational practice across Australian forensic accounting courses. Both academics and practitioners advocated using case studies to simplify the complexity of forensic accounting. Case studies entail students' performance in active and interactive ways. In addition, academics used case studies when educators sought to create a balance between technical and ethical dimensions of forensic accounting practice.

Conclusion

The knowledge constructed in this paper emerged from an ethnographic approach to case study exploration (Morgan & Smircich, 1980; Stake, 1995; Yin, 2009). This paper explored features of forensic accounting pedagogies based on the perspectives of professional stakeholders (academics and practitioners) and based on the current educational practice of Australian universities. In this research, the lens of experiential learning theory (Kolb, 1984; A. Kolb & Kolb, 2005, 2006; D. Kolb, 2015) and signature pedagogies theory (Shulman, 2005) provided a theoretical underpinning to interpret and discuss the findings.

The research revealed the elements and features that embodied the signature pedagogies of forensic accounting. It was found that experiential pedagogies constructed a philosophy for

educating students about forensic accounting. However, while the experiential approach to teaching forensic accounting students was advocated by the participants, it was not widely reflected in the current forensic accounting courses. This paradox derives from; first, the impediments that forensic accounting educators face in collaborating with the forensic accounting industry; and second, the divergence among forensic accounting educators regarding their role. We suggest that forensic accounting educators limit traditional approaches to teaching and aspire to equip students with more experiential learning methods such as case studies.

Limitations and future research

Given that data collection was limited to the Australian context, some caution should be exercised in generalising the results, since the responses gathered may not reflect the views of forensic accounting practitioners and academics outside of Australia. There are some additional limitations. Firstly, the results of the current educational practice in teaching forensic accounting, which have been provided were correct at the time of reviewing universities' websites. Further, some universities do not disclose all the relevant information about the teaching methods of forensic accounting courses. In such cases, the research team contacted the course teaching staff and requested them to send a copy of the curricula, handbooks or syllabi. However, not all academics responded to this request.

Forensic accounting is growing as research interest and many aspects still need exploration (Huber & DiGabriele, 2015). Therefore, this research adopted a subjective philosophy (Silverman, 2015) to understand the discourse around forensic accounting pedagogical approaches. This research sets the platform for further research studies into this important topic for forensic accounting education and the profession. Quantitative follow-up work (e.g. survey) might help better understand the features of forensic accounting pedagogies

that have been identified in the study and how pedagogies could be designed to incorporate the experiential approach and profession-relevant skills. Such quantitative investigation could also seek insights from additional stakeholders such as professional accounting bodies, forensic accounting students, and institutional management.

This research has yielded findings that offer insights for forensic accounting educators in planning and implementing the pedagogical practices that incorporate industry expectations about the professional practice of forensic accountants. It is expected that these recommendations along with further research will ensure that forensic accounting programs remain relevant to professional practice.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Appendix A

Table 1: Interview guide (there are questions in the interview guide not used for the purpose of this paper)

Primary question	Motivation	Academies	• What motivates you to teach FA? from lecturer and college point of view
		Practitioners	• What motivates you to be a forensic accountant?
	FA education/ training	Academies	• Do you believe that FA education/training has an impact on the students in their future career? Why?
		Practitioners	• Did you receive any FA education/ training? Please tell me about • Do you believe that FA education/training impact on the students in their future career? Why? Which is most beneficial to FA practitioner? • What is the type of education/training forensic accountant should have to distinguish himself from the ordinary accountant or auditor?
Pedagogical issues	Professional Competencies	Academies	• What are the competencies that could be given to the students in the class? • How to equip the student with these competencies? • What do you expect from a graduated forensic accounting student?
		Practitioners	
	Teaching activities	Academies	• What are the appropriate teaching activities?
		Practitioners	
		Academies	

	Methods of examination	Practitioners	• What are the appropriate methods of examination?
	The ethics code of conduct	Academies	• Does the forensic accounting team member in this firm adhere to a specific ethical code of conduct? What is it? Could you tell me about it? • Is this ethical code of conduct different to a normal accountant? How? • How could the forensic accounting profession benefit society? • How to teach the student about the ethical code of conduct?
		Practitioners	
Sum up	Ending		• Would you like to add anything else?

Chapter Six: Discussion and Conclusion

6.1. Overview

There have been inconsistencies in forensic accounting education in terms of the curricula content and the pedagogies used (Kresse 2008; Seda & Kramer 2009; Smith & Crumbley 2009; Seda & Kramer 2014). Furthermore, the provision of forensic accounting education worldwide has been insufficient to produce adequate numbers of qualified forensic accountants to meet the increased demand for forensic accounting practitioners (DiGabriele 2008; Davis et al. 2010; Tiwari & Debnath 2017). Little systematic research had been done in the past to provide a basic to develop forensic accounting education (Huber & DiGabriele 2015; Hegazy et al. 2017; Botes & Saadeh 2018) and very little research had been conducted in the Australian context (Chen & Van Akkeren 2012; Van Akkeren & Tarr 2014; Van Akkeren & Buckby 2015; Tarr et al. 2016). Hence, the present study endeavoured to address this gap by providing an analysis of the current state of forensic accounting education in Australia. This study's investigations were based on a qualitative research design. First, data were gathered through a review of secondary information obtained from Australian universities' websites. Second, the independent views of Australian forensic accounting practitioners and academics across the country were sourced through a series of semi-structured interviews.

The initial step for this project was to conduct a review of the relevant literature which has been presented in the second chapter to provide insights from the works of the prior researchers. These have examined and explored a range of forensic accounting education issues, including an overview of the forensic accounting profession, and a review of curricular and pedagogical issues. To place the study within its philosophical and methodological orientation a comprehensive demonstration of the relevant assumptions has been provided in the second section of the second chapter. The second chapter also provided justifications of the theoretical framework used to guide the research process and interpretation of the findings.

As this research project adopted the thesis by publication style of presentation, this thesis contains three centrally linked and interconnected papers. Based on the information and data collected from various sources a detailed analysis of the current status of forensic accounting

education within the Australian universities was provided in the first paper (chapter 3). The findings from the interviews were presented in the second and third papers (chapters 4 and 5). These findings have been separated into two main issues; the first is forensic accounting curricula which is presented in the second paper (chapter 4), and the second is forensic accounting pedagogies, which is presented in the third paper (chapter 5).

The primary purpose of this final chapter is to synthesise and discuss the overall findings. This chapter presents the conclusions from the research and is organised into six sections as follows. The next section presents a synthesis of the research findings followed by a section demonstrating the empirical and theoretical implications. The fourth section outlines the research limitations. The fifth section provides possibilities for extending this research in future and contains the researcher's suggestions for how to use the findings from this research as a comparison base. The final section presents concluding remarks of this thesis.

6.2. Synthesis of the research findings

As this thesis contributes to the development of forensic accounting education in Australia, this thesis encompasses two phases to fulfil this study's aims. The results of this study have been presented in three papers (chapter 3, 4 and 5). The first phase explored existing forensic accounting curricula and pedagogies within the Australian universities. The result of this phase has been distributed between the first and the third paper, where the first paper covers the existing curricular issues and the third paper covers the existing pedagogical issues. In the second phase, the perceptions of Australian forensic accounting practitioners and academics have been gathered, which in turn served as a link between paper 2 and paper 3. The data gathered in the second phase has been reported in the second and third paper. The second paper covers the curricula formation process while the third paper covers the features and the forensic accounting signature pedagogies.

The discussion in this section is based on the data and information analysed in the three papers (chapter 3, 4 and 5). Since these papers have presented comprehensive analyses with the pertinent references on various features and issues of forensic accounting education in Australia this discussion is confined to significant aspects of the findings. Therefore, the following subsections provide discussion related to four main issues. First, the background of the current forensic accounting curricula offered within Australian universities. Second, identifying curricular issues relevant in forensic accounting education. Third, the background of current forensic accounting pedagogies used within Australian universities. Fourth, pedagogical issues needed to be addressed in forensic accounting education.

6.2.1. Curricular issues

The first paper in this thesis explored the directions that Australian universities have taken in offering forensic accounting education. This study considered the major topics of the existing forensic accounting curricula, as described by the literature, to inform and guide the investigation related to the current stance of programs and courses in Australia. A thematic analysis has been conducted of the curriculum presented on the universities' websites to provide an understanding of the current status quo.

The findings from the first paper extend and enhance the prior knowledge from the literature related to forensic accounting education. Consistent with prior literature, this paper found that fraud, litigation, business valuation, and IT forensics constitute the core components with

criminology and ethics as interdisciplinary components within the forensic accounting curricula. First paper illustrated the need for accounting and auditing as a requirement and prerequisite knowledge for any new student engaged in forensic accounting education. First paper also found that priority has been given to fraud which aligns with the prior research in this field (Curtis 2008b, 2008a; Fleming et al. 2008; Kranacher et al. 2008; Kresse 2008; Seda & Kramer 2014). In addition it has been found that there is limited coverage of the role undertaken by forensic accountants in the courts and the legal framework in which forensic accountants practice. In this respect, universities should develop their curricula to include adequate coverage of the substantial legal duties of forensic accountants; including expert witness roles, dispute resolution, preparing expert reports and responding to cross-examination.

In addition it has been found from the first paper that there is evidence that the existing curricula lack coverage of some topics such as business valuation and IT forensics both of which are important for practising forensic accountants. Business valuation comprises, for example, quantification of loss and damage, insurance claims, insolvency and bankruptcy, business interruption, wrongful death and personal injury, mergers and acquisitions, and delivering an opinion and estimation of assets and liabilities values. Nevertheless, only one university provides a business valuation course while two universities include a module within their forensic accounting courses. Only one university offers IT forensics. This restricts students' experience and exposure to one of the most desirable skill areas - technological skills (Murthy 2010). Regarding interdisciplinary integration, the findings show a predominant focus on ethics and criminology and little attention to psychology and sociology.

The findings yield an understanding of the background of current forensic accounting education within Australian universities. This paper also explored the forensic accounting core and interdisciplinary curricula components and identified the offering modes within the Australian universities. Besides, the findings from this research phase have provided direction for the subsequent papers for this thesis.

The curricular issues surrounding forensic accounting education within the Australian universities have been explored in the second phase of the study and have been reported in the second paper of this research project. Both forensic accounting education documents and forensic accounting stakeholders' perceptions have been gathered through websites analysis and semi-structured interviews. To generate a valid and accurate interpretation of the findings,

this research has used the pedagogic device and knowledge structure theory (Bernstein 1990, 1996, 2000, 2003, 1999).

This second phase of the study contributes to understand what factors influence the transformation process of forensic accounting knowledge into the curricula. It has been found that the variation that has been observed in the existing educational programs of forensic accounting is due to an epistemological uncertainty within forensic accounting education, differences in academic views toward forensic accounting education and inconsistencies in the universities' goals. The second paper has found that the epistemological uncertainty is an impediment that blocks the development of forensic accounting education. This has led to different understandings of the purpose and nature of forensic accounting as a tertiary course. The recontextualising rules that have been found in the second paper include the difference in offering mode and interdisciplinary nature of forensic accounting, the misconception of forensic accounting core activities among forensic accounting educators (Agent problem), the social constraints (public recognition and accreditations of the forensic accounting degrees) and the structure of forensic accounting knowledge. Besides, the second paper has revealed on other rules which may shape the forensic accounting curricula formation; these rules include education of forensic accounting ethics, the integration of IT forensics and business valuation and the integration of interdisciplinary knowledge.

The second paper show how universities providing forensic accounting education programs had tailored the teaching of forensic accounting curriculum to match the niche knowledge and expertise existing within their institutions. The following two reasons are indicated for adopting such strategies when formatting forensic accounting education. First, there are regulative rules and instructional constructs that are related to the universities themselves. Second, these rules and constructs affect the offering of a specific field of knowledge. These include factors such as university timetabling, calendar and venue, restrictions to university resources, a lack of flexibility in curriculum content and delivery, and a lack of Australian based textbooks.

6.2.2. Pedagogical issues

The third paper in this thesis investigated the forensic accounting pedagogical tools. The third paper found a mixture of teaching tools is used within the current forensic accounting courses and educational programs. Several courses employ traditional learning tools to address forensic accounting education. These incorporate literature reviews, presentations and discussion,

which are presented to students to provide them with an opportunity to obtain a theoretical understanding of forensic accounting practice. it has been found that some courses engaged experiential learning such as report writing or case study. These projects encompassed a range of activities such as, a topic-related essay, research project, investigation report, a literature review, or using articles to generate a theoretical explanation.

Additional findings presented in the third paper is that the purpose of adopting different teaching tools in the examined forensic accounting courses was to allow the students to develop their research skills, communication skills, creative questioning skills, problem finding skills and problem-solving skills. These skills assist in the ability to create knowledge that can be applied to real cases, or contribute to the field of forensic accounting to improve professional capabilities. The report writing pedagogy was used to enable the students to develop some vital forensic accounting skills. Another experiential learning pedagogy was to use case studies. Case studies and real-life scenarios are used to simulate forensic accounting work. Generally, case study activities are designed to equip the students with knowledge of fraud examination, evidence, report writing, problem-solving, and the expert witness role. The findings of the third paper asserted on the suitability of the case study as a pedagogical tool to simulate forensic accounting work. The case studies have been recognised from the analysis of the third paper data a signature pedagogy of forensic accounting. The Case study shares all the feature of the profession signature pedagogy as describe by Shulman (2005a) and represents the unique methods and modes of teaching linked with the disciplines, which students are taught in the major aspects of professional work.

This thesis is one of the few studies in forensic accounting education that has explored the signature pedagogies of forensic accounting. In this research, the inquiry focused on the pedagogies used not only in the current forensic accounting stand-alone courses but also in forensic accounting programs among Australian universities. This study found that forensic accounting students enhance their learning by using hands-on experience methods to learn. In addition, there is a consensus among practitioners and academics that there is a necessity for hands-on experience. The findings imply that accounting faculty members should consider combining experiential learning methods into the courses in order to improve students' forensic accounting competencies and prepare students for future work in the forensic accounting industry. The findings point toward the belief that hands-on experience would be more pervasive in forensic accounting education through collaborative efforts between academics

and practitioners so they can jointly contribute to the advancement of the forensic accounting industry.

The research findings support experiential learning as a signature pedagogy and a philosophy of teaching forensic accounting. Several teaching techniques can be used to perform real work scenarios and hands-on experiences. The most pervasive teaching tool may be a case study. Case studies also can include the ethical dimensions of forensic accounting work. However, the findings also support the usefulness of using multiple teaching mechanisms; including, guest speakers, videos, mock trial, report writing, presentations and group discussion. Each teaching mechanism will serve to fulfil various educational purposes in teaching forensic accounting students.

6.3. Implications (empirical and theoretical)

This section discusses the overall contribution of this research project. The contribution is discussed in regards to literature, practice and theory.

6.3.1. Contribution to the literature

In regards to the contribution to the literature, this exploratory study was undertaken in response to scholarly calls for the advancement of empirical research in this area. Recent research on the reform of Australian higher education in the accounting field has made strong calls for curriculum reform (Kavanagh & Drennan 2008; Freeman 2010; Freeman & Hancock 2011). Such reform will result in transformations in educational knowledge to serve the needs of stakeholders with different requirements and expectations (university policy, epistemological beliefs, or market needs). This study has investigated the reasons behind inconsistencies in forensic accounting education practice within the Australian context. It has particularly focused on the lack of coherence between the required knowledge in practice in comparison to what the forensic accounting curricula and pedagogies currently provide by eliciting the perceptions of both forensic accounting practitioners and educators. This study has enhanced understanding of what influences the transformation of the forensic accounting knowledge into the curricula and through the pedagogies.

This research project contributes to the literature in three ways. First, this research explores the current directions that Australian universities have taken in teaching forensic accounting to

higher education students. This research shows the fraud concentration in the forensic accounting programs and emphases on the need to integrate more law, business valuation and IT knowledge in forensic accounting programs. Second, this research solicits practitioners' and educators' perceptions about current forensic accounting curricula and pedagogies. This research shows how forensic accounting educators' beliefs might be an obstacle to capture the wide range of forensic accounting subtopics. In addition, this reach report on the main factors that shape forensic accounting curricula. Third, this research suggests changes that may lead to improvements in forensic accounting education, particularly; the fifth chapter provides suggestions in how to use experiential learning approach to equip students with knowledge of real forensic accounting work. This exploratory research is important for three reasons. First, accounting bodies worldwide have advocated incorporating forensic accounting education into accounting degrees. Second, researchers have noted that while there is increasing demand for forensic accounting skills within the job market, there is a lack of adequate forensic accounting education that reconciles graduates' competencies with the expectations of employers. Third, the research addresses a gap in the accounting education literature as little extant research has focused on forensic accounting curricula and pedagogical approaches.

6.3.2. Contribution to the teaching and professional practice

The Australian educational environment is undergoing significant reform, especially in accounting education (Freeman & Hancock 2011). Consequently, there is a promising environment for forensic accounting, both in terms of education and practice. Currently, universities in Australia provide a diverse range of courses to teach forensic accounting programs. However, Akkeren et al., (2013) reported that some universities provide a separate program in forensic accounting (diploma or masters), while others teach one or two courses of forensic accounting within their accounting programs. This pioneering study has been undertaken in response to scholarly calls to provide suggestions and implications for the advancement of empirical research in this area. This research suggests changes that can lead to improved teaching practices of forensic accounting. The practical contributions of this thesis are presented here and reflect the contribution from each of the main three papers.

In the first paper, the professional practice implications of the results are important to practitioners, standard setters, accounting researchers and educators as they provide directions for the redesign of the forensic accounting curriculum. This suggests that the accounting educators should expose their students to specialised forensic accounting knowledge which is

in demand across a broad range of industries and sectors. The range of specialised knowledge includes business valuation, expert witness, business intelligence, and dispute resolution. Another suggestion is to develop a curriculum that integrates more aspects of psychology and sociology in order to enhance students' comprehension of the behavioural roots of criminal conduct and the social impact of fraud. This paper addressed an important issue, the extent of forensic accounting offerings in Australia. Understanding how forensic accounting is taught in Australia contributes to improving the knowledge of forensic accounting education across the globe.

The second paper has investigated the perceived reasons behind inconsistencies in forensic accounting education within the Australian context and the curricula formation process. It has particularly focused on the lack of coherence between knowledge required in practice and the education curriculum by eliciting the views and perceptions of both forensic accounting practitioners and educators. This paper has enhanced the understanding of what influences the structure of the forensic accounting curriculum. Curriculum reforms will result in transformations in educational knowledge to serve the needs of stakeholders with different requirements and expectations.

The third paper is one of the few studies in forensic accounting education that has explored the signature pedagogies of forensic accounting education. This research explored the current pedagogies in the current forensic accounting stand-alone courses and program of studies among Australian universities. In addition, this research identified the signature pedagogies for forensic accounting by identifying the teaching tools that best serve the intrinsic nature of the forensic accounting profession. This research examined the use of various pedagogical methods which promotes enhancement of educators' understandings about how to increase forensic accounting students' learning experience, knowledge, and performance.

To sum up, if forensic accounting educators want to enhance their forensic accounting offering there are some recommendations they have to follow. First, they should be aware of their belief toward an understanding of forensic accounting as a discipline, it has been evident that their beliefs about the intrinsic role of forensic accounting play a direct role in shaping forensic accounting curricula. Second, the universities benchmarking strategy should be acknowledged to forensic accounting educators because it plays a vital role when the university has a focus on one area. Third, forensic accounting educators should be aware of the knowledge structure of forensic accounting because it shapes the way of structuring forensic accounting curricula.

Fourth, the use of experiential learning tools should be acknowledged because experiential learning tools serve to equip students with hands-on experience. Educators may focus on using case study pedagogy as it has been evident that this kind of pedagogies can transfer to the students a lot of the forensic accounting work culture, professionalism, experience and day to day activates.

6.3.3. Contribution to theory

A subjective philosophy has been adopted for this research (Guba & Lincoln 1985; Patton 1990; Guba & Lincoln 1994) coupled with a qualitative approach to methodology (Stake 1994; Perry et al. 1997; Cresswell 1998; Qu & Dumay 2011; Silverman 2015). This philosophical approach and research method design fit the exploration of the subject matters. The theoretical framework includes the pedagogic device (Bernstein 1990, 1996, 1999, 2000, 2003), experiential learning tools (Kolb 1984; Kolb & Kolb 2005, 2006; Kolb 2015) and signature pedagogies (Shulman 2005c, 2005a, 2005b, 2008).

> *Most organisational scholars are not going to generate a new theory from scratch. Instead, they generally work on improving what already exists. (Whetten 1989, 492)*

In terms of the theoretical contribution of this thesis, Whetten (1989) and Crane et al. (2016) argued that one way of providing a theoretical contribution in the social science is to import a theory from other social sciences beyond the science of phenomenon under research. In this thesis, the intent was not to test a specific theory itself but it was intended to examine and explore the research questions. Therefore, this thesis borrowed the theoretical lenses from the field of education and sociology of education to understand an educational inquiry in the field of forensic accounting.

The pedagogic device theory (Bernstein 1990, 1996, 1999, 2000, 2003) was borrowed from the field of sociology of education to yield an explanation of the rules that influence forensic accounting education and enable a better understanding of the process of forensic accounting curricula formation. In addition, this thesis borrowed experiential learning (Kolb 1984; Kolb & Kolb 2005, 2006; Kolb 2015) and signature pedagogies (Shulman 2005c, 2005a, 2005b, 2008) to enhance the research's theoretical contribution in terms of the existing pedagogical issues. The theoretical interpretation yielded understandings of the characteristics of forensic accounting pedagogies that fulfil the main features of signature pedagogies as noted by (Shulman 2005c). Furthermore, the theoretical interpretation, based on experiential learning

theory (Kolb 1984) yielded understandings of the pedagogy which could serve to connect the students with their future field of practice by exposing them to actual situations of forensic accounting work.

6.4. Limitation

As with any scientific inquiry, this research project is subject to limitations and constraints relevant to time, context and resource barriers. These limitations may influence the research design, the data collection procedure, as well as the finding and generalizability of the findings. The following points are the limitations of this research:

1. Regarding the literature review, there was a shortage of relevant studies on forensic accounting education. However, this study has used a wide variety of literature from accounting education and other fields of education. Therefore, the literature background is comprehensive.
2. The research has been conducted in the Australian context. The academic participants represent nine different universities, including all four universities that teach forensic accounting programs of study and the remaining five academics represent the universities that teach at least one forensic accounting course. In addition, practitioners have a wide and diverse range of experience. The documents examined include all forensic accounting offerings at Australian universities. However, this research requires caution in terms of generalising the results to other contexts, where the results have positioned a bias to the Australian context (Yin 1981, 2009). Findings in qualitative research are not expected to be generalizable to a broader population. Instead, the studies are designed to seek 'illumination, understanding, and extrapolation to similar situations' (Golafshani 2003, 600).
3. The participants in this research were volunteers and were not compensated for participating. The fact these participants chose to participate in the interview process may be driven because of their experiences or their interest in the research topic. Also, this research is limited to the Australian context and based on the perceptions of practitioners and academics. There was difficulty in recruiting participants for the interview process.
4. In this research, a comprehensive review of all Australian universities' websites revealed results on the current offerings of forensic accounting education. However, some

universities' websites provide limited information about the courses. In addition, the information provided herein was correct at the time of reviewing universities' websites.

5. The central focus of the study was on the current structure of the forensic accounting curricula and pedagogies used within Australian universities. Therefore, issues linked to the assessments process and learning objectives are not addressed in this study.
6. The searching process of the universities' websites was not systematically organised because some universities do not disclose all the relevant information about the teaching methods in their forensic accounting courses. In such cases, the researcher contacted the teaching team and requested them to send a copy of the curricula, handbooks or syllabi. However, one course examiner was unable to send the document because the course was still under the development process.

6.5. Future research

As this research was motivated by scholarly and professional calls for research in this field, this study should set the stage for more academic inquiries in the field of forensic accounting education within the international context and the context of Australian higher education. This research addressed an important issue, the educational practice of forensic accounting in Australia. Understanding how forensic accounting is taught in Australia contributes to improving the knowledge of forensic accounting education across the globe. The research has yielded findings that offer insights into forensic accounting educators in planning and implementing curricular and pedagogical practices. It is expected that these findings along with further research suggestions will ensure that forensic accounting education is current and connected to professional practice.

Forensic accounting is growing as a research area but despite this increasing interest many aspects still need exploration (Huber & DiGabriele 2015). Future researchers may investigate more aspects of forensic accounting education to enhance and develop the profession as a whole. The following points give directions to future researchers:

1. Future research is required to explore the assessment process and the associated learning objectives.

2. This research set the stage for further research studies on this important topic. Quantitative follow-up work (e.g. survey) might help better understand the features of forensic accounting pedagogies and curricula recontextualization rules that have been identified in the research and how curricula and pedagogies could be designed.
3. Quantitative investigation could also seek insights from broader stakeholders' perception or diverse cultural contexts.
4. Future research may gather the perception of the professional accounting bodies, forensic accounting students, governmental agencies and institutional management. This research provides a comparative base for such investigations.

6.6. Concluding remarks

This research has addressed the previously neglected, yet essential, subfield of accounting: forensic accounting education practice. While forensic accounting in universities has not been adequately examined in the past, prior researchers have provided two insights into forensic accounting education practices. First, studies have provided quantifications of the prevalence of forensic accounting education offerings (Van Akkeren et al. 2013; Rezaee et al. 2014; Seda & Kramer 2014; Wang et al. 2016). Second, studies have provided normative knowledge about forensic accounting education (Rezaee & Burton 1997; Fleming et al. 2008; Heitger & Heitger 2008; Kranacher et al. 2008; Kresse 2008; Ramamoorti 2008; Young 2008; Seda & Kramer 2014, 2015; Matson 2016; Rezaee et al. 2016; Wang et al. 2016). Moreover, the previous forensic accounting literature has been heavily centred on the USA context (Huber 2011b, 2011a, 2012, 2013, 2014; Huber & Charrier 2015; Seda & Kramer 2015). The scope of this research was extended beyond the scope of prior articles. It may be differentiated from prior studies based on the fact that the study has covered and extended the current body of knowledge about forensic accounting education within the Australian context.

This research hopes to promote the development of forensic accounting education in Australia.. To fulfil this aim, this study adopted a subjective philosophy (Guba & Lincoln 1985; Guba & Lincoln 1994) and qualitative methods (Morgan & Smircich 1980; Stake 1994; Yin 2009; Creswell 2013; Silverman 2015) to explore the current practice in forensic accounting education and the perspective of critical forensic accounting stakeholders. The results obtained from this research can be used as a foundation for future research in this area as well as

providing guidelines for the design and implementation of forensic accounting curricula and pedagogies.

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Appendices

7.1. Appendix (A): ethical clearance

OFFICE OF RESEARCH
Human Research Ethics Committee
PHONE +61 7 4687 5703| FAX +61 7 4631 5555
EMAIL human.ethics@usq.edu.au

UNIVERSITY OF SOUTHERN QUEENSLAND AUSTRALIA

1 February 2017

Mr Hashem Al-Shurafat

Dear Hashem

The USQ Human Research Ethics Committee has recently reviewed your responses to the conditions placed upon the ethical approval for the project outlined below. Your proposal is now deemed to meet the requirements of the *National Statement on Ethical Conduct in Human Research (2007)* and full ethical approval has been granted.

Approval No.	**H17REA008**
Project Title	The adoption of optimal curriculums model for forensic accounting in Australian universities: From a professional stakeholders' perspective
Approval date	1 February 2017
Expiry date	1 February 2020
HREC Decision	**Approved**

The standard conditions of this approval are:

(a) Conduct the project strictly in accordance with the proposal submitted and granted ethics approval, including any amendments made to the proposal required by the HREC
(b) Advise (email: human.ethics@usq.edu.au) immediately of any complaints or other issues in relation to the project which may warrant review of the ethical approval of the project
(c) Make submission for approval of amendments to the approved project before implementing such changes
(d) Provide a 'progress report' for every year of approval
(e) Provide a 'final report' when the project is complete
(f) Advise in writing if the project has been discontinued, using a 'final report'

For (c) to (f) forms are available on the USQ ethics website:
http://www.usq.edu.au/research/support-development/research-services/research-integrity-ethics/human/forms

Samantha Davis
Ethics Officer

Copies to: hashem.al-shurafat@usq.edu.au

7.2. Appendix (B): participants' information sheet

University of Southern Queensland

Participant Information for USQ Research Project Interview

Project Details

Title of Project:	**Adoption of Optimal Curriculums Model for Forensic Accounting in Australian Universities: From A Professional Stakeholders' Perspective**
Human Research Ethics Approval Number:	H17REA008

Research Team Contact Details

Principal Investigator Details

Mr Hashem Al-Shurafat
Email: Hashem.Al-Shurafat@usq.edu.au
Telephone: (07) 4631 5407
Mobile: 0423394884

Supervisor Details

Professor John Sands
Email: John.Sands@usq.edu.au
Telephone: (07) 4631 5385

Dr. Claire Beattie
Email: Claire.Beattie@usq.edu.au
Telephone: (07) 4631 1289

Dr. Gregory Jones
Email: Gregory.Jones@usq.edu.au
Telephone: (07) 4631 1286

Description

This project is being undertaken as part of, PhD Project.

The purpose of this project is to develop a new model for forensic accounting and compare it with the existed ones, in order to explore the variance between what the stakeholder expect and what the universities already provide.

The research team requests your assistance because the interviews will be seeking to solicit the professional stakeholders' perspective about the optimal curriculums model to adopt.

Participation

Your participation will involve participation in an interview that will take approximately 60 to 90 Minutes of your time.

The interview will take place at a time and venue that is convenient to you.

OR

The interview will be undertaken by teleconference at a date and time that is convenient to you.

Questions will include inquiries about curriculum development, learning outcomes, course content, knowledge, skills, abilities, attribute, teaching mechanisms, references, materials, assessment procedures and ethics.

The interview will be audio / video recorded.

Your participation in this project is entirely voluntary. If you do not wish to take part you are not obliged to. If you decide to take part and later change your mind, you are free to withdraw from the project at any stage. You may also request that any data collected about you be destroyed. If you do wish to withdraw from this project or withdraw data collected about you, please contact the Research Team (contact details at the top of this form).

Your decision whether you take part, do not take part, or to take part and then withdraw, will in no way impact your current or future relationship with the University of Southern Queensland

Expected Benefits

It is expected that this project will not directly benefit you. However, it may benefit a wide range of the profession stakeholders due to many reasons. First, Adoption of forensic accounting into the universities accounting curriculum has a considerable possible to improve students' skills and competencies. Second, the result will shed the light on the primary characteristics that student should pursue in order to be a forensic accountant third, forensic accounting grants the practitioner with profound knowledge of both accounting and law. Such a professional will not only be ready to investigate accounting issues but will also be prepared to collect evidence, provide litigation support, as well as testify in court. Forth, the result of the study may be used by universities in developing their accounting and finance curriculum and for accounting students to know the knowledge, traits, and skills needed by employers..

Risks

There are no anticipated risks beyond normal day-to-day living associated with your participation in this project.

Privacy and Confidentiality

All comments and responses will be treated confidentially unless required by law.

- the collected data through the interview will be audio-recorded and transcribed in a complete manner by an expert transcriber
- the recording will not be used for any other purpose (i.e. as a teaching/ instructional tool)
- *Research data will be available for use in future research.*
- Part of the data will be presented anonymously in the thesis analysis part.

Any data collected as a part of this project will be stored securely as per University of Southern Queensland's Research Data Management policy.

Consent to Participate

We would like to ask you to sign a written consent form (enclosed) to confirm your agreement to participate in this project. Please return your signed consent form to a member of the Research Team prior to participating in your interview.

Questions or Further Information about the Project

Please refer to the Research Team Contact Details at the top of the form to have any questions answered or to request further information about this project.

Concerns or Complaints Regarding the Conduct of the Project

If you have any concerns or complaints about the ethical conduct of the project you may contact the University of Southern Queensland Manager of Research Integrity and Ethics on +61 7 4631 2214 or email researchintegrity@usq.edu.au. The Manager of Research Integrity and Ethics is not connected with the research project and can facilitate a resolution to your concern in an unbiased manner.

Thank you for taking the time to help with this research project. Please keep this sheet for your information.

7.3. Appendix (C): consent form

University of Southern Queensland

Consent Form for USQ Research Project Interview

Project Details

Title of Project:	**Adoption of Optimal Curriculums Model for Forensic Accounting in Australian Universities: From A Professional Stakeholders' Perspective**
Human Research Ethics Approval Number:	H17REA008

Research Team Contact Details

Principal Investigator Details

Mr Hashem Al-Shurafat
Email: Hashem.Al-Shurafat@usq.edu.au
Telephone: (07) 4631 5407
Mobile: 0423394884

Supervisor Details

Professor John Sands
Email: John.Sands@usq.edu.au
Telephone: (07) 4631 5385

Dr. Claire Beattie
Email: Claire.Beattie@usq.edu.au
Telephone: (07) 4631 1289

Dr. Gregory Jones
Email: Gregory.Jones@usq.edu.au
Telephone: (07) 4631 1286

Statement of Consent

By signing below, you are indicating that you:

• Have read and understood the information document regarding this project.	☐Yes / ☐No
• Have had any questions answered to your satisfaction.	☐Yes / ☐No
• Understand that if you have any additional questions you can contact the research team.	☐Yes / ☐No
• Understand that the interview will be audio / video recorded.	☐Yes / ☐No
• Understand that you will not be provided with a copy of the transcript of the interview for your perusal and endorsement prior to inclusion of this data in the project.	☐Yes / ☐No
• Understand that you are free to withdraw at any time, without comment or penalty.	☐Yes / ☐No
• Understand that you can contact the University of Southern Queensland Manager of Research Integrity and Ethics on +61 7 4631 2214 or email researchintegrity@usq.edu.au, if you have any concern or complaint about the ethical conduct of this project.	☐Yes / ☐No

- Are over 18 years of age. ☐Yes / ☐No
- Understand that any data collected may be used in future research activities. ☐Yes / ☐No
- Agree to participate in the project. ☐Yes / ☐No

Participant Name	
Participant Signature	
Date	

☐ Please tick this box and provide your email address below if you wish to receive a summary of the research results.

Email:_____

Please return this sheet to a Research Team member prior to undertaking the interview.